Threatened Birds of Asia:
The BirdLife International Red Data Book

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WHITE-BROWED BUSHCHAT

Saxicola macrorhyncha

Critical □ —
Endangered □ —
Vulnerable ■ C1

This desert specialist has a small, declining population because of agricultural intensification and encroachment, which qualifies it as Vulnerable.

DISTRIBUTION The White-browed Bushchat is found in a circumscribed area of semi-arid country in north-western India and (perhaps now formerly) eastern Pakistan. It has apparently strayed as far east as the Bharatpur area of Rajasthan and as far south as Goa, with two simultaneous historical records from southern Afghanistan (see Remarks 1, Migration).

■ ***PAKISTAN*** The species once occurred east of the Indus river in Punjab and Sind, where it was apparently rare and local even when first discovered (Roberts 1991–1992; see Remarks 2, 3). There are early records from Bibi Nani (Bolan) and Chaman, Baluchistan, although these are best treated as unconfirmed (Ticehurst 1926–1927, Rahmani 1994b). A pair believed to be of this species were seen in the "Pat Desert", Sind, February, 1963–1965 (Holmes and Wright 1968–1969). There have been no confirmed recent observations and it is feared extinct in the country (Roberts 1991–1992). Records are from: ■ ***Sind*** (see Remarks 3) **Thar Parkar district**, undated (Hume 1878a); ■ ***Punjab*** (see Remarks 4) **Pahrwal**, Gujrat district, January 1943 (specimen in BMNH); **Lalian**, Jhang district, February 1919 (specimen in BMNH); **Winoka**, Jhang district, February 1919 (Whistler 1922a, ms); **Nurpur canal escape**, Jhang district, July 1919 (Whistler 1922a); **Khiwa**, Jhang district, breeding, 1917, 1919 and 1920 (11 specimens in BMNH); **Mukhiana**, Jhang district, December 1917 (Whistler 1922, ms); **Mochiwala**, Jhang district, January 1918 (Whistler 1922a, ms); **Ludha Mani** (Ludamahni), Jhang district, September 1919 (Whistler ms, juvenile female in BMNH); **Dab Kalan**, Jhelum river, Jhang district, December 1918 (specimen in BMNH); **Shadan Lund**, near the Indus, Dera Ghazi Khan, December 1938 (specimen in BMNH); **Jampur**, near the Indus, Dera Ghazi Khan, February 1937 (specimen in BMNH); Bhowana (untraced), Jhang district, August 1919 (female in BMNH, Whistler 1922a).

■ ***INDIA*** The species occurs generally in low-lying arid areas of the north-west. Early records are from western Uttar Pradesh, Punjab, Haryana, south-eastern Rajasthan and Gujarat. There are more recent records from eastern Rajasthan and Goa. Ali and Ripley (1968–1998) suggested that it may survive in Kutch, and this was confirmed by Rahmani (1996d) in the 1990s. It is now thought to survive in numbers only in the Thar (or Indian) Desert along the western borders of Rajasthan and Gujarat, close to the Pakistan border (Rahmani 1996d). Records are from:

■ ***Punjab*** **Shahpur**, c.1878 (specimen in BMNH, Hume 1878a);

■ ***Haryana*** **Ambala**, November 1866 (specimen in BMNH); **Rori**, Sirsa subdivision, Hisar district, March 1915 (specimen in BMNH, Whistler 1915b); **Sohuwala** (Sahuwala), Sirsa subdivision, Hissar district, in winter c.1914 (Whistler 1915b); **Bhattu** (Bhutto), December 1867 (specimen in BMNH); **Sirsa**, c.1850 (specimen in BMNH), c.1878 (Hume 1878a) and Lumba (Lumbee), Sirsa, November 1876 (specimen in BMNH); **Raniya** (Ranian), near Sirsa subdivision, Hisar district, November 1914 (specimen in BMNH, Whistler 1915b); **Hansi**, Hisar district, c.1878 (Hume 1878); **Sultanpur**, Gurgaon, January, February 1878 (Hume 1878a, two specimens in BMNH);

■ *Rajasthan* **Bikaner**, c.1878 (Hume 1878a), **Diyatra** area, Bikaner district, at and near Tokla, 11, January 1994 (Rahmani 1995b, 1997a), Niagoan, five, January 1994 (Rahmani 1997a), and Hadda, 20, January 1994 (Rahmani 1997); **Nokha** area, Jodhpur district, 12, January 1994 (Rahmani 1997a); **Kanasar**, Jaisalmer district, two, January 1994 (Rahmani 1997a) and and Kanasar-Bap area, Jaisalmer district, two, January 1994 (Rahmani 1997a); **Bap** area, Jodhpur district, nine, January 1994 (Rahmani 1997a); **Ramgarh**–Asatur area, Jaisalmer district, two, February 1994 (Rahmani 1997a); **Mohangarh**, Jaisalmer district, one, December 1992 (Rahmani 1997a); near **Keoladeo National Park**, at Koladahar, one, February 1988 (Rahmani 1993), although the identification was later questioned (Rahmani 1995b); near **Khara**, Jaisalmer district, a male and several juveniles, August 1978 (van der Berg *et al.* 1981), and Khara-Savreej, Jodhpur district, five, February 1994 (Rahmani 1997a); c.55 km east of **Jaisalmer**, March 1876 (specimen in BMNH), at the "Fossil Park", 20 km south-east of Jaisalmer, a female, November 1988 (B. Watts *in litt*. 1999), and 30 km east of Jaisalmer, one in December 1994 (P. Undeland *in litt*. 1995); **Jodhpur district**, many around Jodhpur, February 1876, January 1878 (Hume 1878a, 25 specimens in BMNH), including near the Magna/Mogra road, February 1878 (three specimens in BMNH), and the "Rohut road" (Rohat), February 1878 (two specimens in BMNH), although more recently difficult to find in the vicinity of Jodhpur (Rahmani 1995b), but still present in the district with two at Sewada, January 1994 (Rahmani 1997a); south-west of **Pushkar**, 1–2, November 1999 (K. Evans *in litt*. 1999); **Desert National Park**, Jaisalmer district, single females in March 1985, February 1987, one female in January 1990, one in December 1992, one in July 1993 between Khuri and Phulia, 13 in February 1994 in the Sudasari area (Rahmani 1995b, 1997a) and Sam Bustard Enclosure, one, January 1982 (Robson 1982), with subsequent sightings by several observers; near **Undu**, Jaisalmer–Barmer crossing, four in February 1993 (Rahmani 1995b, 1997a); **Nasirabad**, Ajmer district, January 1900, January 1936 (two specimens in BMNH); **Chopra** (Chopsa), c.35 km from Jodhpur, January 1878 (specimen in BMNH); **Ranthambore National Park**, February 1987 (Jepson 1987, Turin *et al.* 1987), five in 1986, 1987, February 1992 (Rahmani 1997a); **Sonkhaliya** (Shokaliya, Sonkalia Bustard Closed Area), Ajmer district, two, January–February 1993 (Rahmani 1993), three, January 1996 (P. Alström, U. Olsson and D. Zetterström *in litt*. 2000); **Rohat** (Rohit), Pali district, December 1948 (eight specimens in FMNH, UMMZ and AMNH); Sariska Sanctuary (not mapped), undated (Rahmani 1995b);

■ *Gujarat* **Deesa** (Disa), November 1875 (Butler 1875–1877, specimen in BMNH; also *Stray Feathers* 5: 131–132); **Rapar** (Raipur), in Nagar District, Kutch, "beginning of 1872" (Stoliczka 1872); near **Bhuj**, early 1870 (Stoliczka 1872); **Velavadar National Park**, Bhavnagar district, 10, January 1993 (Rahmani 1997a), but no further records traced;

■ *Uttar Pradesh* **Meerut**, January 1913 (specimen in BMNH); Rooija (Rooiya), **Aligarh district**, November 1877 (specimen in BMNH), but now absent (Rahmani 1995b);

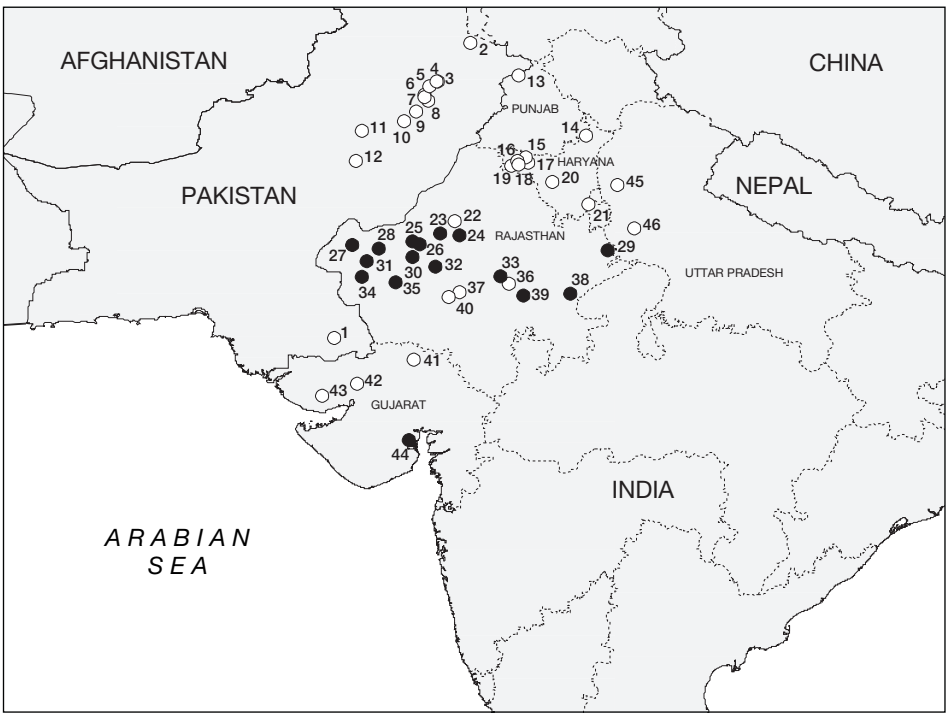
A record supposedly of a first-winter male, Carambolin, Goa, December 1996 (Holt 1997, *Oriental Bird Club Bull*. 25 [1997]: 61–69), and subsequently, is now emphatically judged not to have involved this species (P. Holt and D. Zetterström *per* E. Urquhart *in litt*. 2001).

POPULATION The clear evidence, based on qualitative assessments from the late nineteenth and early twentieth centuries, is that this species has experienced a long, strong decline to a point where it is, today, apparently a single-country endemic with a low overall population.

Pakistan Jhang district was previously a stronghold, although even there it was apparently rare and local despite an abundance of apparently suitable habitat (Whistler 1922a). Apart from these records, considerable previous and subsequent ornithological exploration in Sind and Punjab resulted in no further observations, indicating that the species was rare and sparsely distributed throughout the country. Despite 28 years' residency in southern Punjab including repeated visits to Jhang district, Roberts (1991–1992) failed to relocate the species and he concluded that it was extinct in Pakistan.

India Earlier workers found it common and even locally "extremely abundant" in winter around Jodhpur after a very dry period (Hume 1878a). During his visit to Kutch, Gujarat, however, Stoliczka (1872) only saw two individuals, suggesting that it was uncommon there. A century or so later, it was considered a rare and very local species, although not uncommon in certain areas (Ali and Ripley 1968–1998). There were only around 15 records between 1974 and 1994, but during four intensive surveys in 1993–1994 about 86 birds were located in 18 localities (Rahmani 1997a). Of these, 25 were seen over a 45 km transect on a single day and, on another day, 13 birds were seen on six line-transects of 1.5 km each (Rahmani 1997a). However, out of a total of 38 transects, the bird was seen on only nine (Rahmani 1997a). These data indicate that the species is not as threatened as once feared, being common in certain localities, although overall very local (Rahmani 1997a).

ECOLOGY ***Habitat*** The White-browed Bushchat generally occurs in subtropical thorn-scrub and sandy semi-desert (*Stray Feathers* 5 [1877]: 117–140, Hume 1878a, Roberts 1991–1992), or sandy waste ground, mostly bare with scattered low bushes (Whistler 1915b, 1922a). A recent study in the Thar Desert found that it typically inhabited dry sandy areas with low herbs and shrubs (often 50–70 cm high) and very scattered bushes (Rahmani 1997a). The



The distribution of White-browed Bushchat *Saxicola macrorhyncha*: (1) Thar Parkar district; (2) Pahrwal; (3) Lalian; (4) Winoka; (5) Nurpur canal escape; (6) Khiwa; (7) Mukhiana; (8) Mochiwala; (9) Ludha Mani; (10) Dab Kalan; (11) Shadan Lund; (12) Jampur; (13) Shahpur; (14) Ambala; (15) Rori; (16) Sohuwala; (17) Bhattu; (18) Sirsa; (19) Raniya; (20) Hansi; (21) Sultanpur; (22) Bikaner; (23) Diyatra; (24) Nokha; (25) Kanasar; (26) Bap; (27) Ramgarh; (28) Mohangarh; (29) Keoladeo National Park; (30) Khara; (31) Jaisalmer; (32) Jodhpur district; (33) Pushkar; (34) Desert National Park; (35) Undu; (36) Nasirabad; (37) Chopra; (38) Ranthambhore National Park; (39) Sonkhaliya; (40) Rohat; (41) Deesa; (42) Rapar; (43) Bhuj; (44) Velavadar National Park; (45) Meerut; (46) Aligarh district.

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

proportion of ground cover in these sites ranged between 25 and 50%, but was generally around 35% (Rahmani 1997a). Shrubs identified at sites were *Crotolaria burhia*, *Aerva persica*, *A. pseudotomentosa* and *Cassia italica*, while *Capparis decidua* was the dominant species (Rahmani 1997a). In a few areas *Calotropis procera* and *Leptadenia pyrotechnica* were also seen (Rahmani 1995b, 1997a). It is found in the same general biotope as Desert Wheatear *Oenanthe deserti* and Greater Short-toed Lark *Calandrella brachydactyla* (Ali and Ripley 1968–1998, Rahmani 1995b). Holmes and Wright (1968–1969) found it in an abandoned field in a desert area. Whistler (1922a) found "one or two" individuals in cultivation, but always in the vicinity of waste ground, while its "favourite haunts" were plains of hard sandy soil, small sand-dunes and broken ground, largely bare but studded with small desert plants; he also found a few pairs at Nurpur Canal escape, where seepage had produced vast reedbeds surrounded by "jungles" of pampas grass (see Remarks 5). Birds are apparently sometimes "fairly tame" but at others "surprisingly wild" (Whistler 1922a).

Food The species is mainly insectivorous, with a diet mostly comprising beetles, ants (e.g. *Camponotus*) or flying insects (Hume 1878a, Ali and Ripley 1968–1998, Roberts 1991–1992, Rahmani 1995b). The stomach of one individual contained beetles, larvae and green vegetable matter, and another contained larvae, carabids and other beetles (Whistler 1922a). It gleans this food mostly from the ground, or by making aerial sallies, usually flying back to the same perch after consuming its prey (Roberts 1991–1992, Rahmani 1995b). Rahmani (1996d) frequently observed one bird hovering for 2–3 seconds to catch an insect and also calculated that, on average, 17 seconds elapsed between sallies; sallies are apparently commonest in the middle of the day or in the evening when flying insects are most abundant. In cold weather, conversely, most foraging takes place on the ground (Rahmani 1996d). Like its congeners, the species perches freely on bush tops and stems, such as *Saccharum munja* cane grass, *Prosopis spicigera* thorn-bushes or even telegraph wires, sometimes allowing close approach (Whistler 1915b, Roberts 1991–1992, Rahmani 1995b). It watches for prey from these perches or hops on the ground for a few minutes at a time (Roberts 1991–1992). Hume (1878a) reported some "nearly digested matter" in the stomachs of specimens that "might have been the pulp of seeds", but Rahmani (1996d) never saw it taking seeds or other vegetable matter. Foraging has been recorded throughout the day, and even 30 minutes after sunset (Rahmani 1996d).

Breeding Nothing is known about breeding habits (season, nest, clutch size, incubation and fledgling periods, etc.). However, an adult male with several juveniles has been seen near Khara in western Rajasthan on 2 August 1978 (van den Berg *et al*. 1981) and Whistler (1922a) found pairs in the Jhang district (juveniles and a full plumaged male from Khiwa are stored in BMNH) in April and July, with juveniles appearing in August and September in the same area.

Migration The species has variously been reported as sedentary (Baker 1922–1930, Ali and Ripley 1968–1998, Roberts 1991–1992), local in movement or migratory (Rahmani 1996d). Ticehurst (1922–1924) thought it "absolutely resident", as did Whistler (1922a) ("there can be no doubt that the bird is strictly resident"), but these judgements appear to be mistaken. Most records have been made during winter (Whistler 1915b, Roberts 1991–1992, Rahmani 1997a), at which season it has been found in Saurashtra (Dharmakumarsinhji 1955), Haryana (Whistler 1915b), east to the Bharatpur area of Rajasthan (Rahmani 1993) and even south to Goa on at least two occasions (Robson 1997, A. Prasad *in litt*. 1999). It has never been found in these areas outside the cold months. Indeed, early impressions were that it must be breed outside Indian limits in Central Asia (*Stray Feathers* 5 [1877]: 53–59). In Jhang district of Punjab, however, Whistler (1922a) found pairs in April and July, and obtained birds in juvenile or first-year plumage in August and September, concluding that it was strictly resident. Furthermore, locals reported to Hume (1878a) that the species bred around Jodhpur in the "scanty" rainy season. The sighting of an adult male and several juveniles in August in the Khara area in Jodhpur district (van den Berg *et al.* 1981), and of a female near Khuri in late

July (Rahmani 1997a), also implies that the species breeds in the Thar Desert during the rains and possibly moves elsewhere during the non-breeding season. This remains to be confirmed. Further evidence of movement is provided by the fact that Rahmani (1996d) found several individuals in one area of Desert National Park in January 1994 but none in the area a few months later in May. It thus probably undertakes considerable local migrations and sometimes longer-distance movements in response to rainfall levels (Rahmani 1997a). Such seasonal or irruptive movements quite probably resulted in its occurrence long ago in Afghanistan and more recently in Goa.

THREATS ***Habitat loss*** Given its predilection for arid areas and native desert flora, Whistler (1922a) warned that the future of the species would be adversely affected by the progress of irrigation systems in India, and this has proven to be the case. Northern areas of the Thar Desert in Haryana and Punjab, and Ganganagar in Rajasthan, were once semi-arid with vast tracts of scrub and wasteland, but have been almost totally converted into cropland mainly due to good irrigation facilities through a network of canals (Rahmani 1997a, 1998a). Other areas are subject to "horrendous overgrazing" (B. F. King verbally 1998), a factor that also reduces habitat quality for the species. Very little of the desert is protected, the main site being the Desert National Park (Rahmani 1998a). This protected area is nevertheless threatened by impending habitat alteration as a result of the planned construction of an irrigation canal (the Indira Gandhi Nahar Project, or Rajasthan Canal) through the park, a move that would increase human use and disturbance of the area, which is already considerably affected by the estimated 30,000 people living within its boundaries (Rahmani 1998a; see equivalent section under Great Indian Bustard *Ardeotis nigriceps*). Similarly, in Pakistan its apparent extinction is thought to be related to its inability to adapt to the spread of irrigation and cultivation (Roberts 1991–1992). In the middle of the nineteenth century, only around 4% of Sind received sufficient irrigation to permit cultivation, a figure that had increased to c.16% by 1921 and almost 100% by the late 1960s (although actual cultivated areas were smaller than this) (Holmes and Wright 1968–1969). "Huge expanses of formerly monotonous scrubby desert have been replaced by a lush fertility that would have appeared inconceivable 40 years ago" (Holmes and Wright 1968–1969), and it appears that the White-throated Bushchat may not have been able to accommodate these changes. However, there may be other, unidentified contributory factors in its decline, since in locations such as the Banni area of Kutch and the Jodhpur area of Rajasthan large areas of apparently suitable habitat remain but the species is now absent (Rahmani 1997a).

MEASURES TAKEN ***Protected areas*** In India the species has been recorded at Sam in Desert National Park and at Sonkhaliya, both protected enclosures for Great Indian Bustard (see relevant account). There have also been single records at each of Keoladeo National Park, Ranthambore National Park and Velavadar National Park.

MEASURES PROPOSED ***Protected areas*** Better protection of Desert National Park could be achieved by resettling people outside the park area, rehabilitating them elsewhere with suitable compensation, banning irrigation in the area, re-demarcating the boundaries and developing core areas (Rahmani 1998a). Grassland/pasture plots should be developed in the command area of the Indira Gandhi Nahar Project (Rajasthan Canal) where cultivation is unviable; indeed, the realignment of the canal is called for, and at least an environmental impact analysis made (Rahmani 1996d, 1998a). Proper protection of desert habitats in Gujarat and Rajasthan, principally for the Great Indian Bustard (see under which for details), will be of benefit to this species.

Research In order to obtain an accurate picture of the seasonal distribution, ecology and status of this species, a major project is necessary. Suitable habitat in Pakistan should be

visited to ascertain whether the species is indeed extinct there or whether it survives in small pockets. Furthermore, a clear understanding of its habitat requirements, breeding biology and local movements (if any) is required so that an appropriate conservation strategy may be developed (Rahmani 1997a).

REMARKS (1) A bird was collected in Kandahar (where the species was "not very common") and another in Dubrai in April 1881 (two specimens in BMNH, Swinhoe 1882; also Ticehurst 1926–1927). The species was not mentioned by Paludan (1959) and has not been rediscovered in Afghanistan, suggesting that it might be rare there and probably an irregular irruptive migrant (see Migration). (2) Hume (1878a) stated that the species occurred in "Sind (Thurr and Pakhur districts, and probably elsewhere)". However, a few decades later Ticehurst (1922–1924) failed to find the species there, or any of Hume's specimens for that matter, although he assumed that earlier records were likely to be correct. (3) A specimen originally in the R. Meinertzhagen collection, apparently from Rohri, Sind, February 1937, and stored in BMNH, Tring (Rahmani 1994b), is perhaps of dubious provenance and therefore not mapped. (4) A specimen (in BMNH) labelled "Punjab" was perhaps collected in the Salt Range (Whistler ms). (5) Both Roberts (1991–1992) and Rahmani (1996d) commented that such habitat (at the Nurpur escape) is typical of White-tailed Bushchat *Saxicola leucura*, the female of which vaguely resembles the female and juvenile of White-browed Bushchat. Indeed, Roberts (1991–1992) found that Whistler had misidentified one female specimen now in BMNH: it was labelled *macrorhyncha* but was in fact *leucura*. As *macrorhyncha* has otherwise never been found in reeds or near wetlands, it is tempting to disregard this anomalous habitat information. However, there are correctly identified specimens from Nurpur, and Whistler (1922a) (who described the White-throated Bushchat as "easily distinguished" and wheatear-like, rather than the very stonechat-like *leucura*) identified several "pairs" of both species in the area. There is thus no good reason to reject Whistler's records, and it appears that the species might sometimes venture and even breed in damper conditions than usual.