

# Threatened Birds of Asia:

## The BirdLife International Red Data Book

Editors

N. J. COLLAR (Editor-in-chief),  
A. V. ANDREEV, S. CHAN, M. J. CROSBY, S. SUBRAMANYA and J. A. TOBIAS

Maps by

RUDYANTO and M. J. CROSBY

Principal compilers and data contributors

■ **BANGLADESH** P. Thompson ■ **BHUTAN** R. Pradhan; C. Inskipp, T. Inskipp ■ **CAMBODIA** Sun Huan; C. M. Poole ■ **CHINA** ■ **MAINLAND CHINA** Zheng Guangmei; Ding Changqing, Gao Wei, Gao Yuren, Li Fulai, Liu Naifa, Ma Zhijun, the late Tan Yaokuang, Wang Qishan, Xu Weishu, Yang Lan, Yu Zhiwei, Zhang Zhengwang. ■ **HONG KONG** Hong Kong Bird Watching Society (BirdLife Affiliate); H. F. Cheung; F. N. Y. Lock, C. K. W. Ma, Y. T. Yu. ■ **TAIWAN** Wild Bird Federation of Taiwan (BirdLife Partner); L. Liu Severinghaus; Chang Chin-lung, Chiang Ming-liang, Fang Woei-horng, Ho Yi-hsian, Hwang Kwang-yin, Lin Wei-yuan, Lin Wen-horn, Lo Hung-ren, Sha Chian-chung, Yau Cheng-teh. ■ **INDIA** Bombay Natural History Society (BirdLife Partner Designate) and Sálím Ali Centre for Ornithology and Natural History; L. Vijayan and V. S. Vijayan; S. Balachandran, R. Bhargava, P. C. Bhattacharjee, S. Bhupathy, A. Chaudhury, P. Gole, S. A. Hussain, R. Kaul, U. Lachungpa, R. Naroji, S. Pandey, A. Pittie, V. Prakash, A. Rahmani, P. Saikia, R. Sankaran, P. Singh, R. Sugathan, Zafar-ul Islam ■ **INDONESIA** BirdLife International Indonesia Country Programme; Ria Saryanthi; D. Agista, S. van Balen, Y. Cahyadin, R. F. A. Grimmett, F. R. Lambert, M. Poulsen, Rudyanto, I. Setiawan, C. Trainor ■ **JAPAN** Wild Bird Society of Japan (BirdLife Partner); Y. Fujimaki; Y. Kanai, H. Morioka, K. Ono, H. Uchida, M. Ueta, N. Yanagisawa ■ **KOREA** ■ **NORTH KOREA** Pak U-il; Chong Jong-ryol, Rim Chuyon. ■ **SOUTH KOREA** Lee Woo-shin; Han Sang-hoon, Kim Jin-han, Lee Ki-sup, Park Jin-young ■ **LAOS** K. Khounbolin; W. J. Duckworth ■ **MALAYSIA** Malaysian Nature Society (BirdLife Partner); K. Kumar; G. Noramly, M. J. Kohler ■ **MONGOLIA** D. Batdelger; A. Bräunlich, N. Tseveenmyadag ■ **MYANMAR** Khin Ma Ma Thwin ■ **NEPAL** Bird Conservation Nepal (BirdLife Affiliate); H. S. Baral; C. Inskipp, T. P. Inskipp ■ **PAKISTAN** Ornithological Society of Pakistan (BirdLife Affiliate) ■ **PHILIPPINES** Haribon Foundation for Conservation of Natural Resources (BirdLife Partner); N. A. D. Mallari, B. R. Tabaranza, Jr. ■ **RUSSIA** Russian Bird Conservation Union (BirdLife Partner Designate); A. V. Andreev; A. G. Degtyarev, V. G. Degtyarev, V. A. Dugintsov, N. N. Gerasimov, Yu. N. Gerasimov, N. I. Germogenov, O. A. Goroshko, A. V. Kondrat'ev, Yu. V. Labutin, N. M. Litvinenko, Yu. N. Nazarov, V. A. Nechaev, V. I. Perfil'ev, R. V. Ryabtsev, Yu. V. Shibaev, S. G. Surmach, E. E. Tkachenko, O. P. Val'chuk, B. A. Voronov. ■ **SINGAPORE** The Nature Society (Singapore) (BirdLife Partner); Lim Kim Seng ■ **SRI LANKA** Field Ornithology Group of Sri Lanka (BirdLife Affiliate); S. Kotagama; S. Aryaprema, S. Corea, J. P. G. Jones, U. Fernando, R. Perera, M. Siriwardhane, K. Weerakoon ■ **THAILAND** Bird Conservation Society of Thailand (BirdLife Partner); U. Treesucon; R. Jugmongkol, V. Kongthong, P. Poonswad, P. D. Round, S. Supparatvirkorn ■ **VIETNAM** BirdLife International Vietnam Country Programme; Nguyen Cu; J. C. Eames, A. W. Tordoff, Le Trong Trai, Nguyen Duc Tu.

With contributions from: S. H. M. Butchart, D. S. Butler (maps), P. Davidson, J. C. Lowen, G. C. L. Dutson, N. B. Peet, T. Vetta (maps), J. M. Villasper (maps), M. G. Wilson

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Wellbrook Court, Girton Road, Cambridge, CB3 0NA, United Kingdom

Tel: +44 1223 277318 Fax: +44 1223 277200 Email: [birdlife@birdlife.org.uk](mailto:birdlife@birdlife.org.uk)

Internet: [www.birdlife.net](http://www.birdlife.net)

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## SICHUAN JAY

### *Perisoreus internigrans*

Critical □ —  
Endangered □ —  
Vulnerable ■ C1; C2a



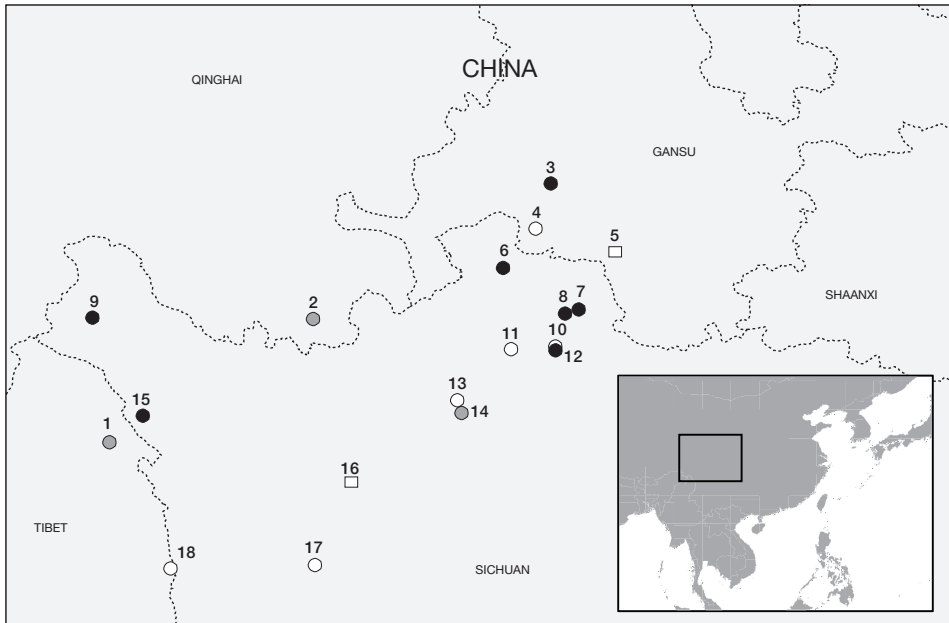
*This jay qualifies as Vulnerable because it has a small, declining, severely fragmented population as a result of extensive deforestation throughout its range.*

**DISTRIBUTION** The Sichuan Jay is endemic to the mountains of south-west China, where it is known from eastern Tibet, south-east Qinghai, southern Gansu and western Sichuan. Records (by province)—but see also Sun Yuehua *et al.* (2001)—are as follows:

■ **CHINA** ■ **Tibet Jomda county**, male collected, July 1976 (Cheng Tso-hsin 1983, male in ASCN; see Remarks 1);

■ **Qinghai Baima county**, September 1960 (Xian Yaohua *et al.* 1964, three specimens in ASCN);

■ **Gansu Jone county**, “rare”, collected in 1987 (Sun Hongying 1988); **Têwo county**, “rare”, undated (Sun Hongying 1988), and recorded in or near to this county at “Min-shan, south Tepo Territory”, two males and one female collected, June and September 1921 (Lönnerberg 1924, three specimens in NRM), “Ha (lower) Tebbuland”, 3,050 m, September 1926, in fir and rhododendron forest (“sambacu forests”) (Bangs and Peters 1928, female in MCZ),



**The distribution of Sichuan Jay *Perisoreus internigrans*:** (1) Jomda county; (2) Baima county; (3) Jone county; (4) Têwo county; (5) Zhugqu county; (6) Zoigê; (7) Jiuzhaigou Nature Reserve; (8) Songpan pass; (9) Serxu county; (10) Mauniugou; (11) Mao'ergai; (12) Songpan county; (13) Tschoksi; (14) Barkam county; (15) Dege county; (16) Dawu county; (17) Shuowlow; (18) Batang.

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

“Tebbu country, south of the Minshans”, 3,050 m, June 1925, in spruce forest (Bangs and Peters 1928, three specimens in AMNH and MCZ); **Zhugqu county**, “rare”, undated (Sun Hongying 1988);

■ **Sichuan Zoigê** (Rouergai), up to 10, June 1994 (Cheung *et al.* 1994, Viney 1994); **Jiuzhaigou Nature Reserve**, Nanping county, four, May 1985 (Buck 1985), pair in the “primeval forest”, May 1986, in mature fir forest (Robson 1986), three in the “primeval forest”, May 1987 (Goodwin 1987), one, May 1989 (Olsson and Alström 1989), one, May 1991 (Jihmanner 1991), two, May 1992 (D. Holden *in litt.* 1999), family party, June 1994 (P. Alström, U. Olsson and D. Zetterström *in litt.* 2000); “**Songpan pass**”, the high pass between Songpan and Jiuzhaigou Nature Reserve, one, c.3,450 m, March 1988, in mature coniferous forest (Nickel 1988), several, May 1991 (MJC), 5–6 birds in a loose flock, July 1997 (R. M. Thewlis *in litt.* 1999), one trapped, 3,200 m, April 1999 (J. Martens *in litt.* 1999); **Serxu county**, one between Serxu and Maniganggo, July 1991 (S. Howe *in litt.* 1999); near **Mauniugou** (or Mauniukou), adult male collected, 3,300–3,600 m, August 1914 (Weigold *et al.* 1922); **Mao’ergai** (Merge), three males and two juveniles collected at August 1931 (Stone 1933, two males in YPM and ZMB), male, two females and a juvenile collected at “Camp 10”, between Karlong and Merge, August 1931 (Stone 1933, male and female in AMNH); **Songpan county** (Sungpan), pullus collected, August 1914 (Weigold *et al.* 1922), flock of five, October (year unspecified) (Yu Zhiwei *per* Liu Naifa *in litt.* 1997), 3,000 m, October 1981 (two specimens in STCCN); “Camp 17”, near **Tschoksi**, August 1931 (Stone 1933, male in BMNH); **Barkam county**, several collected, May–August 1961, in coniferous forest on a high plateau (Cheng Tso-hsin 1965, one specimen in ASCN), “rare” (Tang Chanzhu 1996); **Dege county**, collected at Dumuling, August 1983 (four specimens in ASCN and KIZCN), “rare” (Tang Chanzhu 1996); **Dawu county**, “rare” (Tang Chanzhu 1996); **Shuowlow** (Shoo-O-Lo), Yajiang county, six collected (of both sexes, including the type, a male) and seen in “small numbers” at 4,270 m, August 1908, in coniferous forests (Thayer and Bangs 1912, five specimens in AMNH, FMNH, MCZ and USNM); north of **Batang**, undated (Weigold *et al.* 1922).

**POPULATION** There is very little information available on the population of this species. Most records have involved a small number of individuals and several observers have described it as “rare” (see Distribution). During a survey in 1987, on average fewer than two birds were seen per hour (walking at a speed of 2 km per hour) (Sun Hongying 1988). Given the relatively small number of documented localities and its apparently low population density, it could have a small total population, and it is likely to have declined because of habitat loss.

**ECOLOGY Habitat** Sichuan Jay is found in dense coniferous forest (Cheng Tso-hsin 1987), of spruce (Bangs and Peters 1928) and mature fir (Robson 1986), and in mixed fir and rhododendron forest (“sambacu forests”) (Bangs and Peters 1928). It appears to favour rather dry coniferous forest at high altitude (P. Alström *in litt.* 1993), often with a poorly developed understorey (C. R. Robson verbally 1992, MJC; also Stattersfield *et al.* 1998). It has been recorded (in the upper temperate and subalpine forest zones) from between about 3,000 and 4,270 m (see Distribution), and occurs in forests on the slopes of mountain valleys and on high plateaus (Cheng Tso-hsin 1965). Thayer and Bangs (1912) reported its behaviour to be “exactly like the Grey Jay *Persioresus canadensis* of North America”. It forms small flocks in autumn, usually of five or six birds, but sometimes more than 10 (Liu Naifa *in litt.* 1997).

**Food** It has been reported to eat invertebrates (Madge and Burn 1993), and insects and fruits (Liu Naifa *in litt.* 1997).

**Breeding** Little information is available. Juveniles have been collected between June and September (see Distribution), including: a “fully grown” juvenile female in June (Bangs and Peters 1928); juveniles in August (Stone 1933); a moulting juvenile male (pullus) in August

**Table 1. Changes in the extent of natural habitats within this species's range in south-west China.** The data in this table are reproduced from MacKinnon *et al.* (1996), and show the estimated areas (both original and remaining in km<sup>2</sup>) of presumably suitable habitats within this species's known range, and the area of each habitat estimated within existing protected areas. However, it is important to note that this only gives an indication of the extent of reduction of presumed habitats, as there is no information on the time-scale over which they have been lost, and this species does not necessarily occur throughout each habitat in each province.

Province	Habitat	Original	Remaining	%	Protected	%
Qinghai	alpine grasslands	182,020	111,418	61	101,520	55.8
Qinghai	alpine sparse vegetation	92,840	74,271	80	112,020	121.0
Qinghai	cold coniferous forest	6,714	3,984	59	720	10.7
Qinghai	rhododendron scrub	1,887	1,510	80	0	0
Gansu	alpine grasslands	24,002	14,401	60	1,020	4.2
Gansu	alpine sparse vegetation	2,009	1,406	70	0	0
Gansu	cold coniferous forest	16,351	12,190	75	3,820	23.4
Gansu	temperate coniferous forest	398	40	10	0	0
Sichuan	cold coniferous forest	100,213	57,459	57	2,319	2.3
Sichuan	rhododendron scrub	10,952	8,761	80	0	0

(Weigold *et al.* 1922); and a “fresh immature” female in September (Bangs and Peters 1928). A family party was seen in mid-June (P. Alström, U. Olsson and D. Zetterström *in litt.* 2000).

**THREATS** The Sichuan Jay is one of (now) two threatened bird species that are entirely restricted to the “West Sichuan Mountains Endemic Bird Area”, threats and conservation measures in which are profiled by Stattersfield *et al.* (1998).

**Habitat loss** The main threat to this species is likely to be the loss and fragmentation of its forest habitat. The forests in western Sichuan are part of the second most important timber-producing region in China, and forest cover has declined rapidly in this province since the late 1960s because timber quotas have consistently been set above sustainable levels, and forest has been cleared for cultivation and pasture; the province's forest cover is estimated to have declined from 19% to 12.6% between the early 1950s and 1988, mature natural forest being particularly affected (Smil 1984, 1993). Substantial areas of the upper temperate and subalpine zone forests where this species is assumed to breed have been lost (Table 1). Forest cover may also be declining on the Qinghai-Tibetan Plateau because the climate there is progressively becoming drier (Liu Naifa *in litt.* 1997).

**MEASURES TAKEN Protected areas** The eastern part of the range of this species overlaps with the northern part of the current distribution of the giant panda *Ailuropoda melanoleuca* (Zhao Ji *et al.* 1990). The giant panda occurs in subalpine-zone (as well as temperate-zone) forests, and several of the reserves which have been established for it, and for other large mammals, such as takin *Budorcas taxicolor* and golden monkey *Rhinopithecus roxellanae*, contain areas of potential habitat for Sichuan Jay. However, the distribution and abundance of this species within these reserves is poorly known, and it is apparently only recorded in one protected area, Jiuzhaigou Nature Reserve in Sichuan. This has an area of 200 km<sup>2</sup>, where the natural habitats are apparently mainly in excellent condition, but are under pressure from large-scale tourism (MacKinnon *et al.* 1996).

**MEASURES PROPOSED Legislation** Liu Naifa *in litt.* (1997) proposed that Sichuan Jay should be listed as a nationally protected species in China.

**Protected areas** MacKinnon *et al.* (1996) made the following recommendations for the protected area where this species has been recorded: at Jiuzhaigou Nature Reserve, strengthen protection and linkage with other important protected areas in the Min Shan, and control tourism in the reserve.

**Habitat management** MacKinnon *et al.* (1989) made several recommendations designed to protect and improve the quality of giant panda habitats, which could also be of benefit to the conservation of Sichuan Jay, including: the reduction of human activity within giant panda habitat; limitation and control of logging; control against fire; and restoration of damaged habitats.

**Research** Studies are required to establish the habitat requirements, altitudinal range and population status of this species. Madge and Burn (1993) noted that most ornithological work in its range has taken place in May and June, when it is possible that this species is nesting and consequently remains very unobtrusive, and suggested that fieldwork in autumn would probably be more productive in locating this difficult species. The Zoological Institute in Beijing is currently conducting a three-year study of it (1999–2001), supported by the National Natural Science Foundation of China (Lu Xin *in litt.* 1999; see Remarks 2). Surveys are required to establish whether it occurs in any of the other protected areas in or near to its known breeding range, including: in Sichuan, Baihe Nature Reserve (200 km<sup>2</sup>, forests apparently in good condition except in the valleys and northern face of the reserve), Huanglongsi Nature Reserve (400 km<sup>2</sup>, “important forests” in the reserve), Tangjiahe Nature Reserve (400 km<sup>2</sup>, forests apparently “somewhat damaged but valuable”), Tiebu Nature Reserve (200 km<sup>2</sup>), Wanglang Nature Reserve (332 km<sup>2</sup>, forests apparently in good condition) and Xiaozhaizigou Nature Reserve (67 km<sup>2</sup>, forests apparently in good condition but rather small); in Gansu, Baishuijiang National Nature Reserve (2,137 km<sup>2</sup>, forests apparently in very good condition), Guozagou Nature Reserve (29 km<sup>2</sup>, forests apparently in fine condition but very small), Jianshan Nature Reserve (100 km<sup>2</sup>, forests apparently in good condition) and Touersantan Nature Reserve (319 km<sup>2</sup>, forests apparently in very good condition) (size and condition from MacKinnon *et al.* 1996).

**REMARKS** (1) Cheng Tso-hsin (1987)—and consequently Sun Yuehua *et al.* (2001)—included and mapped Gongbo’gyamda county (and not Jomda county) in the range of this species, apparently in error (possibly because the last two Chinese characters for Gongbo’gyamda county are the same as the characters for Jomda county: SC). In 1976, the year that the single specimen of this species from Tibet was collected, the Academia Sinica survey teams visited Jomda county, but almost certainly did not visit Gongbo’gyamda county (this county was surveyed in 1973) (SC; see Cheng Tso-hsin 1983). (2) The preliminary results of this research were recently published (Sun Yuehua *et al.* 2001), too late for incorporation into this account, although they are fully consistent with the evidence and status assessment presented here.