

GIANT NUTHATCH

Sitta magna



Critical —

Endangered —

Vulnerable C1; C2a

This species has a small population, which is inferred to be declining and severely fragmented as a result of loss of its conifer and mixed forest habitats to logging, fuelwood collection, shifting cultivation and fire. These factors qualify it for Vulnerable.

DISTRIBUTION The Giant Nuthatch has a fairly circumscribed and naturally (and now unnaturally) discontinuous range in the mountains of southern China (almost restricted to Yunnan), eastern Myanmar (principally in Shan state) and northern Thailand.

■ **CHINA** The species occurs in Yunnan, south-west Sichuan and south-east Guizhou. It has apparently disappeared from some old localities (e.g., Dali) because of logging (Yang Lan *in litt.* 1997), and its range is now fragmented. Records (by province) are from:

■ **Sichuan Yanyuan county**, undated (Li Guiyuan *et al.* 1982); **Miyi county**, April 1960 (Cheng Tso-hsin *et al.* 1963a, female in ASCN);

■ **Yunnan** near **Bayiwua** (Bayina, Mbayiwua), north of Lijiang (Likiang) in the Yangtze loop, 3,050 m, May 1923 (Riley 1926, specimen in USNM), April 1929 (Riley 1932, female in USNM), between “Dyinaloko” and Bayiwua, 3,350 m, May 1923 (Riley 1926, specimen in MCZ); **Yulongxue Shan**, Lijiang autonomous county, 2,500–3,400 m, May and August 1960 (Tan Yaokuang and Cheng Tso-hsin 1964; also Li Guiyuan *et al.* 1982); **Lijiang** (Likiang), four males collected, including the type of *S. m. ligea*, 2,500–3,050 m, August 1923 (Riley 1926, Deignan 1938), seen behind Black Dragon Park, March 1987, in relict stands of pine on the hills (Goodwin 1987), February 1990 (Kazmierczak 1990b), January 1995 (Hornskov 1995b), several, March 1999 (D. L. Johnson *in litt.* 1999); **Jizu Shan** (Gyi-dzin-Shan), above 2,450 m, April 1902 (Rothschild 1926, male in BMNH); **Dali**, undated (Li Guiyuan *et al.* 1982); **Yangbi** (Yangpi), male, December 1931, in pine forest (Stone 1933), November 1960 (specimen in ASCN); Yangbi to **Yongping** (Yangpi–Chutung) road, 1,500–2,550 m, April 1902, March 1906 (two) (Ingram 1912, Rothschild 1926, three specimens in BMNH); **Weishan county** (Waishan), near Menghwa, 2,300 m, male collected, September 1933, in pine forest (Chong 1937); **Baoshan** (Yuen-chang), before 1914 (Rothschild 1926, three specimens in BMNH); **Kunming**, one, October 1979 (Wang Zijiang 1984); **Shuangbai county**, September 1958 (Cheng Tso-hsin and Zheng Baolai 1962, specimen in ASCN), and still present at around 2,000 m but “rare” (Yang Lan *in litt.* 1997); **Wuliang Shan Nature Reserve**, near Huiyao village, Jingdong county, 1,250 m, “rare”, September 1964 (Yang Lan *in litt.* 1997, specimen in KIZCN); **Dongshan**, Mile county, male and female collected, “rare”, 1,550 m, June 1985 (Zheng Baolai 1988, Yang Lan *in litt.* 1997, male in KIZCN); **Zhelong**, Xinping county, 2,000 m, December 1976 (male in KIZCN); **Xinping**, Xinping county, Ailao Shan, 1,400–1,600 m, six collected, “rather common”, December 1976 to January 1977, in mixed coniferous and broadleaf forest, usually seen with other nuthatch species (Li Guiyuan *et al.* 1982; five specimens in KIZCN); **Yongjin** (Yongjing) township, Zhenyuan county, “rare”, May 1960 (Yang Lan *in litt.* 1997, female in KIZCN); **Zhenkang county**, April 1960 (Li Guiyuan *et al.* 1982, female in WUCN); **Longpeng**, Shiping county, “rare”, 1,880 m, June 1985, in Yunnan pine forest (Zheng Baolai 1988, Yang Lan *in litt.* 1997, female in KIZCN); **Jinggu** (Wei-yüan), male collected, March 1899 (Ogilvie Grant 1900c, Ingram 1912, Rothschild 1926); **Meng’a**, four collected, January–February 1959 (Cheng Tso-hsin and Zheng Baolai 1962, two specimens in ASCN);

■ **Guizhou Wanluo**, south-west Xingyi county, male and female collected, 1,250 m, November 1974 (Wu Zhikang *et al.* 1986).

■ **MYANMAR** The species has been found in Karenni (Kayah state), parts of “Southern Shan States” and in the Mogok hills (Smythies 1986). It was described from a female shot at an unspecified locality between Tonghoo and Karenni, undated (Wardlaw Ramsay 1876), with further unspecified records from Karenni, undated (Harington 1909a). Oates (1894) was “pretty certain” he saw this species on Byingyi mountain, Shan state, in March or December 1893, but failed to collect it. Confirmed records are from: **Bernardmyo**, Mogok hills, Katha district, c.1,675 m, April 1934 (Smith 1942, male in BMNH); **Menetaung range** (Mene Taungdan), Yangyi, near Myinkyado, 1,600 m, January 1902 (Bingham 1903); **Loi Mwe**, 1,700 m, February 1933 (Meyer de Schauensee 1946); **Mekong valley**, “on the eastern frontier of Shan States”, 1901 (Bingham 1903); **Loi-San-Pa**, 1889–1900 (Bingham and Thompson 1900); “Pun-Thabet watershed, Mongpaw State,” presumably therefore around **Mong Pawn**, 1,600 m, undated (two specimens in AMNH), December 1900 (female in AMNH); **Taunggyi**, two, 1898 (Rippon 1901), c.1,700 m, May 1900 (male and female in AMNH, Bingham and Thompson 1900), several sightings, 1920s (Wickham 1929–1930), February 1955 (female in USNM), c.1,200 m, one, mid-1980s (B. F. King verbally 1998); **Loi Un** (Loi Un-Loi Salu range), Mawksai, 1,500–1,700 m, January 1901 (specimens in BMNH); near **Yawnghwe** (Yaungwhe), 1,200–1,800 m (Livesey 1933); **Kalaw** (Myelat), 1,350 m, May 1896 (Rippon 1897, 1901), April 1907 (male in AMNH), two, April 1912 (Cook 1913), and April and May 1913 (four specimens in BMNH); near **Mong Hsawk** (Fort Stedman), January 1902 (male in BMNH); **Loi Maw**, 1,800 m, 1899 (Rippon 1901), 1,500 m, April 1902 (female in BMNH); **Nattaung**, Karenni, c.1,700 m, April 1939 (female in BMNH, Smith 1942, Smith *et al.* 1940–1944); “Southern Shan States” (not mapped), May 1899 (two specimens in BMNH), pre-1903 (seven specimens in BMNH), January 1992 (Buck 1992).

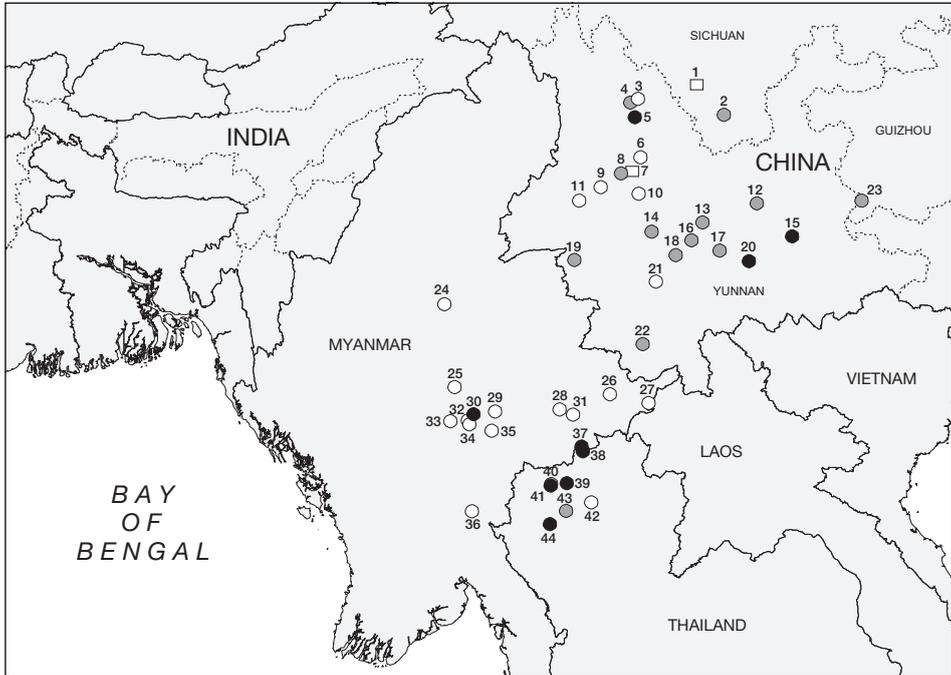
■ **THAILAND** Records are from high mountains of the far north, as follows: **Doi Pha Hom Pok**, Chiang Mai province, 1,950 m, three males, January and February 1938 (Deignan 1946), one, 1,400 m, January 1982 (G. Walbridge *per* P. D. Round *in litt.* 1998); **Doi Ang Khang**, Chiang Mai province, previously recorded at 2–3 discrete sites on this mountain, but now very rare (P. D. Round *in litt.* 1998), five, November 1982 (T. Baker and P. Jepson *per* P. D. Round *in litt.* 1998), pair with nest and two other singles, April 1983 (Round 1983a), at least one pair at km 18–19 on the road ascending the eastern shoulder of the mountain, February 1989 (J. Hough, A. Stoddart and R. Drew *per* P. D. Round *in litt.* 1998), November 1989 (P. D. Round *in litt.* 1998), and a few more recent records, although two were seen at Ban Luang, March 1998 (*Bird Conserv. Soc. Thailand Bull.* 15, 5 [1998]: 14–15); **Doi Chiang Dao**, in Doi Chiang Dao Wildlife Sanctuary, Chiang Mai province, several collected, February 1933 (Meyer de Schauensee 1934), and seen by many observers (*in litt.*) in the 1990s at 1200–1400 m; **Mae Jok Luang**, Chiang Mai/Mae Hongson watershed, one, 1,280 m, April 1997 (*Bird Conserv. Soc. Thailand Bull.* 14, 8 [1997]: 14; also R. Kanjanavanich *per* P. D. Round *in litt.* 1998); **Kiew Kor Mah**, Pai district, on the Chiang Mai/Mae Hongson watershed, February 1957 (specimen in YPM), and in the same area, one at Pai river, Mae Hongson, January 1988 (B. Briggs *in litt.* 1999); **Doi Lang Ka** (Doi Nangka), Chiang Mai province, one male and one female, November 1930 (two specimens in USNM, Riley 1938); **Doi Suthep-Pui National Park**, Chiang Mai province, previously present in small numbers (Meyer de Schauensee 1929, 1930, Deignan 1931, 1936a, 1945), two males, 1,200 m, February 1931 (Chasen and Kloss 1932c, male in ZRCNUS), one male, 1,600 m, January 1967 (specimen in TISTR); **Doi Inthanon National Park** (Doi Angka), Chiang Mai province, one male, 1,200 m, December 1928 (specimen in USNM, Riley 1938), 1,700 m, April 1931 (specimen in FMNH), with many subsequent records, all probably erroneous (see Remarks 1); Doi Khuntan (Koon Tan) National Park (unconfirmed), Chiang Mai/Lamphun (Lampang) provinces, an undated

and unconfirmed record (P. D. Round *in litt.* 1998); Om Koi Wildlife Sanctuary (unconfirmed), Chiang Mai province, and Mae Tuen Wildlife Sanctuary (unconfirmed), Tak province, listed by Royal Forest Department Management Plans (P. D. Round *in litt.* 1998).

POPULATION The Giant Nuthatch appears to be sparsely distributed throughout its small range, but is nevertheless “locally common” (Robson 2000); its population density is at least partly determined by the availability of pines (see Ecology). Although an estimation of numbers is impossible, these are likely to be low (here assumed to be below 10,000 individuals) given this habitat specialisation. Moreover, it is almost certainly declining owing to the widespread commercial harvesting of pinewood. Conversely, much of northern Thailand, and the multitude of mountains in Shan state, Myanmar, and Yunnan, China, are either remote or inaccessible and have therefore been very patchily visited by naturalists in recent years, a fact which may well have over-emphasised the rarity of the species.

China The population has not been assessed in China. It is relatively common in Xinping and Shiping in southern Yunnan, but generally rare elsewhere, and is probably declining (Yang Lan *in litt.* 1997, 1999).

Myanmar In Shan state (“Southern Shan States”), the species was first described as “exceedingly rare” (Bingham and Thompson 1900) but soon afterwards one of the same



The distribution of Giant Nuthatch *Sitta magna*: (1) Yanyuan county; (2) Miyi county; (3) Baiyuwua; (4) Yulongxue Shan; (5) Lijiang; (6) Jizu Shan; (7) Dali; (8) Yangbi; (9) Yongping; (10) Weishan county; (11) Baoshan; (12) Kunming; (13) Shuangbai county; (14) Wuliang Shan Nature Reserve; (15) Dongshan; (16) Zhelong; (17) Xinping; (18) Yongjin; (19) Zhenkang county; (20) Longpeng; (21) Jinggu; (22) Meng'a; (23) Wanluo; (24) Bernardmyo; (25) Menetaung range; (26) Loi Mwe; (27) Mekong valley; (28) Loi-San-Pa; (29) Mong Pawn; (30) Taunggyi; (31) Loi Un; (32) Yawnghwe; (33) Kalaw; (34) Mong Hsawk; (35) Loi Maw; (36) Nattaung; (37) Doi Pha Hom Pok; (38) Doi Ang Khang; (39) Doi Chiang Dao; (40) Mae Jok Luang; (41) Kiew Kor Mah; (42) Doi Lang Ka; (43) Doi Suthep-Pui National Park; (44) Doi Inthanon National Park.

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

observers, after getting into suitable habitats at sufficiently high elevations, found that it did “not seem to be rare” (Bingham 1903). Livesey (1933) likewise found it locally “not uncommon” and it was apparently “not uncommon in the pine forests of Nattaung” (on the borders of Kayin and Kayah states; previously in Karenni) (Smith *et al.* 1940–1944). On the strength of these reports, Smythies (1986) concluded that it was “not uncommon in Karenni and parts of the Shan States”. However, only three post-1950 records for the country have been traced here; and while this is probably more a reflection of low observer coverage rather than of a steep decline in population levels, there must be some concern that an undetected diminution of range and numbers has been occurring.

Thailand Earlier this century, the species was variously described as “by no means common” on Doi Suthep in Thailand (Deignan 1931), “not uncommon” there (Deignan 1936a, Deignan 1945), and “rather common” (Meyer de Schauensee 1929). In spite of the high number of visits by ornithologists in recent years, however, it has not been recorded on this mountain and is almost certainly locally extinct; it was still present in the 1960s but apparently absent by 1978 (Round 1984, 1988a). Meyer de Schauensee (1934) considered the species “not rare” in northern Thailand; indeed he collected nine during a short period in 1933. Populations can apparently be quite dense: “a relict stand of woodland on Doi Ang Kang, in which pines (*Pinus khesya* [sic]) and oaks (*Quercus*) predominated, probably held at least three territories” (Round 1983a). This population has undoubtedly declined as suitable habitat has been destroyed; the species is now “very scarce” on Doi Ang Kang (*Bird Conserv. Soc. Thailand Bull.* 15, 5 [1998]: 14–15, P. D. Round *in litt.* 1998). There is thus good reason to believe that the population of the species in northern Thailand is both fairly small and declining steeply. It was recently estimated (by the MASS database) at 1,300 individuals, although this appears optimistic given the distributional data available.

ECOLOGY Habitat In China the Giant Nuthatch inhabits coniferous forest and mixed coniferous and broadleaf forest at 1,000–2,000 m (Li Guiyuan *et al.* 1982); at Wanluo, for example, birds were collected in mixed forest of “Yunnan pine” and chestnut trees (Wu Zhikang *et al.* 1986). In Myanmar and Thailand it is also rarely found far from pine forest, being almost entirely limited to areas in which large mature *Pinus kesiya* are present, generally between 1,200 m and 1,800 m (Rippon 1901, Livesey 1933, Deignan 1936a, Round 1988a, Robson 2000). It was thought to prefer the “largest trees”, always remaining “high up” (Meyer de Schauensee 1930), although more recent reports have it as descending and even nesting at low heights on occasion (e.g. Round 1983a). Livesey (1933) saw it in “quite open country flying from one small tree to the next”, although it is likely that this type of habitat is only used by transitory birds and cannot support resident populations. In autumn and winter it is sometimes seen in parties with other nuthatch species (Yang Lan verbally 1997).

Food Most feeding is observed in pines, even by a pair that was nesting amongst deciduous trees (Round 1983a). Although it usually clammers around large branches in the manner of most nuthatches (Harrap and Quinn 1996), it was observed by Wickham (1929–1930) behaving like an ordinary passerine as it foraged on the branches of trees, apparently looking for insects. In Yunnan, Cheng Tso-hsin and Zheng Baolai (1962) found beetles, berries, butterflies and moths (these latter quite possibly as larvae rather than adults) in the stomachs of six birds collected, while Li Guiyuan *et al.* (1982) found ants and beetles in eight stomachs and fruit in two.

Breeding A nest found early April 1933 contained three half-fledged young and was sited in a natural hole in a tree-trunk, about 2.1 m from the ground without mud plastered round the entrance, unlike many nuthatch species (Livesey 1933). In early April 1983 a nest was discovered in a hollow 8 m high oak *Quercus*: the nest hole was about 3 m off the ground, where the trunk diameter was about 25 cm (Round 1983a). Another nest in Thailand was

found in a *Pinus kesiya* trunk on Doi Chiang Dao in late March; it contained young (*Bird Conserv. Soc. Thailand Bull.* 15, 5 [1998]: 14–15).

THREATS *China* The species is threatened by reductions in forest cover, largely perpetrated by logging and forest fire (Yang Lan *in litt.* 1997). Details of habitat loss in Yunnan, China, appear in the equivalent section under Rufous-necked Hornbill *Aceros nipalensis* and White-speckled Laughingthrush *Garrulax bieti*. Although trade is thought to be only a minor threat, the species was found on the price list of the “Hong Kong Bird Shop”, price US\$25, during a survey of wildlife trade in Hong Kong in November–December 1992 (Dick *et al.* 1992).

Thailand Areas in northern Thailand within its preferred altitudinal range—especially those holding conifers, which are more highly combustible than other forest trees—have largely been deforested by shifting cultivators (Round 1988a). Areas of remaining pine forest are also being steadily degraded by the removal of larger trees for use as fuelwood and kindling (P. D. Round *in litt.* 1998). The species has apparently disappeared from two former localities (Doi Suthep and Doi Inthanon) and is becoming increasingly rare at another (Doi Ang Kang) owing to the loss of the few remaining stands of large pines (P. D. Round *in litt.* 1998). Hunting, burning and forest clearance are continuing more or less unchecked on mountains in northern Thailand, even within protected areas (Round 1984). Fire is a significant threat to the species (P. D. Round *in litt.* 1999), especially as older pines may be very vulnerable to a high frequency of burning. The habitat of some drier ridges in Doi Chiang Dao Wildlife Sanctuary changed completely between January 1998 and January 1999, chiefly owing to fire damage sustained in the first few months of 1998 (P. D. Round *in litt.* 1999).

MEASURES TAKEN The species is legally protected in Thailand (WARPA) and Myanmar (Wildlife Act 1994). In mainland China the Giant Nuthatch has been recorded in or near to several protected areas in Yunnan: Yulong Xueshan Nature Reserve (260 km², forests apparently in fine condition), Ailao Shan National Nature Reserve (504 km², forests apparently in fairly good condition, but partly degraded in the lowlands) and Wuliang Shan Nature Reserve (234 km², forests apparently in very good condition) (sizes and condition from MacKinnon *et al.* 1996). In Thailand, the species occurs in Doi Chiang Dao Wildlife Sanctuary (521 km²) and in Doi Khuntan National Park (255 km²), and is listed for two other wildlife sanctuaries; although it once occurred within Doi Suthep-Pui National Park and Doi Inthanon National Park, it is apparently no longer present at these sites.

MEASURES PROPOSED The priority for this species is to maintain as many large patches of montane pine-dominated forest within its range as possible. Steps to reduce deforestation in mountainous areas should thus be taken, especially towards a reduction in logging or exploitation of commercially valuable pine species on which this species depends. As populations in Thai reserves are seemingly small and declining, and as conservation action in Shan state, Myanmar, is currently impracticable, the emphasis should fall on determining the quality of protected-area coverage for this species in Yunnan and making modifications to the reserve network and its management as necessary. Quantifying population size and habitat availability (specifically the extent of pine forest) within protected areas is the first step. The range of this species quite closely overlaps with that of the eastern race of Hume’s Pheasant *Syrnaticus humiae burmanicus*, and the siting and management of protected areas should thus take into account the requirements of both species.

MacKinnon *et al.* (1996) made the following general recommendations for the relevant protected areas in Yunnan: jointly manage Yulong Xueshan Nature Reserve and Haba Xueshan reserve; extend Ailao Shan National Nature Reserve to link up with Wuliang Shan reserve, thus forming the “Ailao-Wuliang Shan priority unit”; extend Wuliang Shan Nature

Reserve, to link with Ailao Shan reserve. It has also been suggested that nestboxes should be placed in pine forest to improve breeding success (Yang Lan *in litt.* 1997), an idea that is worth pursuing if it is established that the youth of the trees is a limiting factor.

Although numbers of the species at Doi Chiang Dao are small, the value of the protected area to this species is potentially significant. Habitat, especially pine forest, should be protected and managed, and efforts made to control fires. Also in Thailand, the species has been inconclusively reported from Doi Khuntan National Park, and any suitable habitat in the area should thus be properly surveyed. If sizeable populations of birds are found in either Thailand or Myanmar, the possibility of establishing effective protected areas should be assessed.

REMARKS (1) Numerous sight records from Doi Inthanon since the early 1980s by both Thai and foreign observers are discounted here owing to probable confusion with Chestnut-vented Nuthatch *Sitta nagaensis*, given the fact that the areas in question lack the large-girth pines with which this species seems always to be associated (P. D. Round *in litt.* 1999).