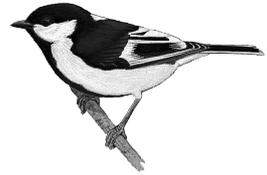


WHITE-NAPED TIT

Parus nuchalis



Critical —

Endangered —

Vulnerable A1c; C1; C2a

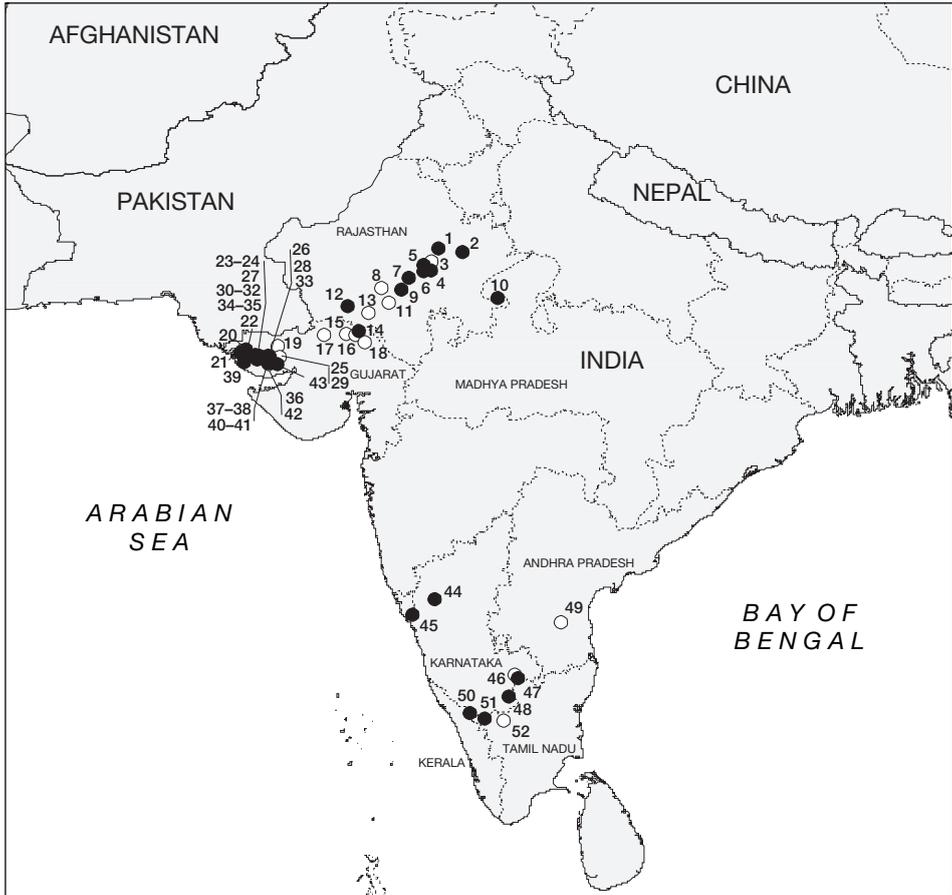
This species underwent a rapid population decline in the recent past. Its small, severely fragmented population continues to decline, although at a reduced rate, as a result of the loss, degradation and fragmentation of its tropical thorn-scrub habitat. It therefore qualifies as Vulnerable.

DISTRIBUTION The White-naped Tit is endemic to India, occupying a restricted range with two isolated populations. The first, and best known, occurs in an area of north-western India: central and south-central Rajasthan (Jodhpur, Nagaur, Jaipur, Ajmer, Pali, Jalore and Sirohi districts), Kutch and northern Gujarat (Banas Kantha and Mahesana districts). The second is in southern India: the Eastern Ghats west of Nellore in Andhra Pradesh, west-central and south Karnataka (Dharwad district and Bangalore districts), and northern Tamil Nadu (Periyar district). Records are from:

■ **INDIA** ■ **Rajasthan Sambhar**, Maroth or Moroth, near Sambhur lake, eastern borders of Jodhpur, 12 specimens in May, around 1870, January, June and July 1872 (Adam 1873, Whistler 1938, five specimens in BMNH), at Mokrana, in hills west of Sambhur lake towards marble quarries, c.1870 (Adam 1873), at Kochavun, near Sambhur, April, May 1873 (three specimens in BMNH), at an unspecified site around Sambhur lake before 1945 (Ali 1945), Sambhur lake, May, June, August 1873 (19 specimens in BMNH), and at Sambhur Salt Works, two, October 1996 (Tiwari in prep.); **Kanota**, Nasia, Jaipur, two, October 1996 (Tiwari in prep.); **Kishengur** (Kishanghar), December 1869 (female in BMNH); **Ajmer**, c.1870 (Butler 1875–1877, Ali 1945), in the hills in rainy seasons until September, unspecified years (H. D. Watson in Whistler ms), more recently in this district: three in January 1996 and one in January 1998 at Sonkhaliya (P. Alström, U. Olsson and D. Zetterström *in litt.* 2000), two, October 1996 (Tiwari in prep.); **Nasirabad**, Ajmer district, February 1900 (male in BMNH), and foothills 10 km from Nasirabad, January 1936 (female in BMNH), two, April 1994 (Tiwari in prep.), and about 7.5 km along Ajmer road, two, December 1935 (female in BMNH); near **Ramsar**, Ajmer district, one, January 1996 (Tiwari in prep.); **Sendra Reserve Forest**, Ajmer district, 500 m, two, October 1996 (Tiwari in prep.); near **Pali**, Jodhpur, c.1870 (Butler 1875–1877, Whistler 1938); **Todgarh** (Ravli Todgarh), Ajmer, one, May 1994 (Tiwari in prep.); **Bar** (Bar village forest), Pali district, two, October 1996 (Tiwari in prep.); **Desuri** (Desure) road from Jodhpur, February 1878 (specimen in BMNH); near **Jalore**, two, November 1930 (H. D. Watson in Whistler undated) and Sundamata hill, Jalore, two, October 1996 (Tiwari in prep.); **Sirohi**, Sirohi district, December 1948 (male in FMNH); Panchota hill (untraced), Nagur district, two, October 1996 (Tiwari in prep.);

■ **Gujarat Balaram**, Palanpur, Banaskantha, 500 m, January 1946 (Ali 1954–1955, male in USNM) and Chitrani village, near Balaram, May 1996 (Tiwari in prep.); around **Deesa** (Disa), Banaskantha, January, April 1876 (two males in BMNH), c.1870 (Butler 1875–1877, 1877a), before 1945 (Ali 1945), January 1946 (Ali 1954–1955: two specimens in USNM); **Gangasagar**, near Palanpur, January 1946 (Ali 1954–1955), and Jethi railway station, near Palanpur, September 1996 (Tiwari in prep.); **Suigam** (Soegam), c.1870 (Butler 1875–1877); **Taranga hill**, Mehsana district, July 1931 and February 1932 (Ali 1954–1955); **Koonria**, Kutch, December 1895 (Lester 1904, Hussain *et al.* 1992); **Davapar** (Dayapar), July 1984 (Hussain *et al.* 1992); **Baranda**, September 1989 (Hussain *et al.* 1992); **Matanomadh** (Mata-no-madh),

Kutch, March 1944 (Ali 1945, 1954–1955), January 1991 (Hussain *et al.* 1992); **Vigodi**, February 1987 (Hussain *et al.* 1992); **Vedhar camp**, near Fulay, April 1993 (Tiwari and Rahmani 1996); **Doria**, borders of Rann of Kutch, before 1945 (Lester 1904, Ali 1945); **Moti-Aral**, April 1993 (Tiwari and Rahmani 1996); **Payya** (Paya), November 1990 (Hussain *et al.* 1992), 1991–1993 (Tiwari and Rahmani 1996); **Piyoni temple**, November 1992 (Tiwari and Rahmani 1996); **Soomrasir**, Kutch, before 1945 (Lester 1904, Ali 1945); **Dhinodhar**, August 1976, September 1989 (Hussain *et al.* 1992); **Jathavira**, 1990–1993 (Hussain *et al.* 1992, Tiwari and Rahmani 1996); **Sanarnath**, near Jathavira, October 1991 (Tiwari and Rahmani 1996); **Adochani dam**, September 1986 and July 1987 (Hussain *et al.* 1992); **Pakhda hill**, Moti-Virani, September



The distribution of White-naped Tit *Parus nuchalis*: (1) Sambhar; (2) Kanota; (3) Kishengur; (4) Ajmer; (5) Nasirabad; (6) Ramsar; (7) Sendra Reserve Forest; (8) Pali; (9) Todgarh; (10) Bar; (11) Desuri; (12) Jalore; (13) Sirohi; (14) Balaram; (15) Deesa; (16) Gangasagar; (17) Suigam; (18) Taranga hill; (19) Koonria; (20) Davapar; (21) Baranda; (22) Matanomadh; (23) Vigodi; (24) Vedhar camp; (25) Doria; (26) Moti-Aral; (27) Payya; (28) Piyoni temple; (29) Soomrasir; (30) Dhinodhar; (31) Jathavira; (32) Sanarnath; (33) Adochani dam; (34) Pakhda hill; (35) Virani; (36) Godsar; (37) Bhuj; (38) Bolarigarh; (39) Naliya; (40) Tapkeshwari; (41) Chaduva; (42) Madhapur; (43) Fulay; (44) Dharwad; (45) Anshi National Park; (46) Bangalore; (47) Dommasandra; (48) Kaveri river; (49) Veliconda range; (50) Wynaad district; (51) Masnigudi; (52) Satyamangala.

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

1991, July 1992, June 1993 (Tiwari and Rahmani 1996); near Sukhpar and **Virani**, at “Sukhpar virani”, April 1990 (Hussain *et al.* 1992), and at Sukhpar road, Moti-Virani, January 1992 (Tiwari and Rahmani 1996); **Godsar**, Kutch, July 1896 (Lester 1904, Hussain *et al.* 1992), August 1943 (Hussain *et al.* 1992); around **Bhuj**, Kutch, August–September 1943 (Ali 1954–1955), including Bhujia hill, 1943–1944 (Ali 1954–1955), March 1947 (G. M. B. Sparks *in litt.* 2000), June 1993 (Tiwari and Rahmani 1996); **Bolarigarh**, March 1990 (Hussain *et al.* 1992); Ramvada, near **Naliya**–Abdhasa, May 1992 (Tiwari and Rahmani 1996); **Tapkeshwari**, Kutch, undated (Ali 1945), September 1986 (Hussain *et al.* 1992); **Chaduva**, Bhuj district, Kutch, August 1943 (Ali 1954–1955) and before 1945 (Ali 1945, Hussain *et al.* 1992), November 1986, February 1988 and June 1989 (Hussain *et al.* 1992); **Madhapur**, Kutch, undated (Ali 1945); **Fulay** (Fulay-Chhari), January and March 1990 and January 1991 (Hussain *et al.* 1992), 1992–1994 (Tiwari and Rahmani 1996); Moti-Ber (untraced), December 1995 (Tiwari *in prep.*);

■ **Karnataka Dharwad**, 700 m, September 1995 (Uttangi 1995); near Kamshetadi in the buffer zone of **Anshi National Park** (Anashi), February 1994 (Uttangi 1994b, 1995); c.16 km west of **Bangalore**, undated (Jerdon 1862–1864, Butler 1875–1877); near **Dommasandra** (Bommasandra), December 1985 (Lott 1987, Lott and Lott 1998); on the **Kaveri river** (Cauvery), December 1984 (SS), and c.7 km upstream of its confluence with the Arkavati river (Arkavari), October 1985 (Lott 1987); Heganuru State Forest (untraced), November 1986, January 1987, October 1995, November 1995 (Lott and Lott 1998);

■ **Andhra Pradesh** in the Eastern Ghats west of Nellore, and thus presumably in the **Veliconda range**, undated (Jerdon 1862–1864);

■ **Kerala Wynaad district**, between 1985 and 1988 (Zacharias and Gaston 1993);

■ **Tamil Nadu** north-eastern edge of **Masnigudi** (Masinagudi), near the eastern limit of Mudumalai National Park, March 1997 (K. D. Bishop *in litt.* 1998); **Satyamangala**, 600 m, September 1934 (Ali and Whistler 1942–1943, Ali 1945).

POPULATION The White-naped Tit appears to be in serious difficulties. Both range and population seem to have declined significantly in the last century and at present it occurs in low densities throughout (Tiwari and Rahmani 1996, Tiwari *in prep.*). Its total population cannot be assessed by using a constant density value across its modern range, for reasons of the patchiness in abundance described below; overall numbers must be very low.

Nineteenth-century accounts imply that the species was locally common, at least in the north-west of its range. According to Adam (1873), for example, it was “so common” in the woods around Maroth (Sambhur, Rajasthan) that he never visited this area without shooting one or more individuals. It was also described as “not uncommon” in the western (i.e. northern) part of its range (A. O. Hume footnote to Butler 1875). However, it later became clearer that its abundance is patchy: thus although first thought to be “rare” around Deesa, Gujarat (Butler 1875–1877), it was later judged “not of so rare occurrence”, having been met with “constantly” in the region (Butler 1875–1877); by contrast, although Stoliczka (1872) saw several in western Kutch (Gujarat), he thought the species “decidedly rare” there overall, while Ali (1943–1944) also considered it very rare during his surveys of the Kutch region, and then revised this judgement, describing it as “fairly common” there, but “capriciously patchy” (Ali 1954–1955). In the 1930s and 1940s, it was sparsely distributed around Nasirabad, Rajasthan (BMNH label data). In the 1990s in most of Kutch it was again judged patchily distributed, but by then nowhere common (Tiwari and Rahmani 1996), an assessment likewise applied to both Gujarat and Rajasthan (Tiwari *in prep.*). Tiwari (*in prep.*) did not come across the species at Taranga hill, Gujarat, where it had been recorded in 1931–1932 (Ali 1954–1955), suggesting that a contraction in range might have taken place.

It has always been a rare bird in southern India. A single specimen was obtained in the Eastern Ghats (Jerdon 1862–1864; see Shyamal 1995) and another at Bangalore (Butler 1875–1877); local people informed Jerdon (1862–1864) that it was “rare”. The fact that Whistler

and Kinnear (1931–1937) were tempted to suggest that “there must be some mistake” with these early records is testimony to the oddness of this distribution and the rarity of the population involved. It was even thought extinct around Bangalore by Baker and Inglis (1930) or George (1994), but there have been a few recent sightings from Karnataka, Kerala and Tamil Nadu (see Distribution)—that from Kerala listing the species as “rare” (Zacharias and Gaston 1993).

ECOLOGY Habitat This is a species of tropical dry thorn-scrub forest. In Gujarat it occurs in “low jungles, thin and thorny” (Stoliczka 1872), these being characterised by *Acacia leucophloea*, *A. nilotica*, *Prosopis cineraria*, *Ziziphus jujuba*, *Capparis aphylla*, *Salvadora oleoides*, *S. persica* and *Grewia tenax* (Tiwari and Rahmani 1996). Also in Gujarat, Ali (1954–1955) recorded it in very dry habitats of broken stony hummocky semi-desert well covered with *A. nilotica*, *Prosopis spicigera*, *Salvadora persica* and *S. oleoides*, and bushes of “*Balsamodendron*” *mukul*, *Grewia populifolia* and similar species. In Kutch, it is apparently “mainly observed” in *Acacia catechu* woodland (Hussain *et al.* 1992). It has also occasionally been recorded in small groves close to villages (Tiwari and Rahmani 1996), in gardens adjoining tropical thorn-forest, and on the Ajmer Golf Course (H. D. Watson in Whistler *ms*, Uttangi 1995). During drought years, birds may stray into vegetated streambeds and irrigated cropfields (Tiwari in prep.). They roost in natural hollows or fissures in dead *Acacia* trees and showed a strong fidelity to roost sites, with some being used year-round (Hussain *et al.* 1992, Tiwari and Rahmani 1996); for nearly seven years, a bird (possibly the same individual) roosted inside a hole in the cross-bar of a gate in Bhujia hills, Kutch (Ali and Ripley 1968–1998). In Kutch, it was always associated with dead and decaying trees, where it often roosted in old holes apparently of Yellow-crowned Woodpeckers *Dendrocopos mahrattensis* (Tiwari and Rahmani 1996). The general habitat type of the species is similar to that occupied by White-bellied Minivet *Pericrocotus (erythrogygius) erythrogygius* and Spotted Creeper *Salpornis spilonotus*, two scarce species that may soon qualify as Near Threatened (based on comments from P. C. Rasmussen verbally 1999).

Its habitat in the south of India was long a subject of conjecture. Jerdon’s (1862–1864) assertion that they inhabited the “tops of heavily wooded hills” in the Eastern Ghats was thought suspicious (Whistler and Kinnear 1931–1937) or “incongruous” (Ali 1954–1955). Recently it has been seen in habitat closer to that favoured in the north-western states. A bird observed at Masinagudi was in degraded thorn-forest (K. D. Bishop *in litt.* 1998) and other sightings derive from undulating terrain along a river in dry deciduous jungle dominated by *Albizia amara* and *Acacia leucophloea*, and with a sparse shrub growth dominated by *Solanum pubescens* (SS, Lott and Lott 1998). In northern Karnataka, a pair was seen in a Dharwad garden containing various fruit-trees while the surrounding area belonged to a transitional belt of tropical thorn-forest (Uttangi 1995). In Kerala the species has been recorded in moist deciduous forest (Zacharias and Gaston 1993).

Although Ali and Ripley (1968–1998) suspected that it was a replacement species of the Great Tit *Parus major* (to which it is closely related: Ali 1954–1955) and therefore mutually exclusive in range, Tiwari (in prep.) found both forms present at four localities (Balaram and Jethi forest areas in north Gujarat, Sundamata hill, Maroth and Sambhar in Rajasthan). Similarly, it was observed feeding alongside 3–4 Great Tits in Mudumalai (K. D. Bishop *in litt.* 1998). In Karnataka, it accompanied a mixed-species flock comprising Common Iora *Aegithina tiphia*, Gold-fronted Chloropsis *Chloropsis aurifrons*, Brown-capped Pygmy Woodpecker *Picoides nanus*, Grey-breasted Prinia *Prinia hodgsoni* and Small Minivet *Pericrocotus cinnamomeus* (SS), and in Banaskantha district, Gujarat, Tiwari (in prep.) found a pair to be part of a mixed flock of Great Tits, Small Minivet and Oriental White-eye *Zosterops palpebrosa*. It is commonly found in pairs or family parties of 4–5 (Ali 1954–1955, Hussain *et al.* 1992).

Food The diet includes caterpillars, the fruits of *Salvadora oleoides* and the nectar of *Capparis aphylla* (Tiwari in prep., Tiwari and Rahmani 1996). Although most foraging is arboreal, birds have also been seen picking insects from dung on the ground (Tiwari and Rahmani 1996, Tiwari in prep.), and they occasionally drink water from puddles (Tiwari and Rahmani 1996, Tiwari in prep.). Food brought to a nest comprised hairy (21.3%) and non-hairy (56.6%) caterpillars, insect pupae, beetles and weevils (13%) and spiders (9.1%) (Tiwari and Rahmani 1996).

Breeding The species breeds during the monsoon, from May to August (Adam 1873, Ali and Ripley 1968–1998), with July–August apparently being the favoured months in Kutch (Ali 1954). The season in southern India is probably similar as a juvenile was collected at the Bilgirirangan hills on 14 September (Whistler ms). A nest found in July was placed in an old woodpecker hole about 2.5 m up in a 5 m tall *Salvadora persica* (Tiwari and Rahmani 1996), while the two nest sites found by Ali (1954–1955) were about 4 m from the ground in *Acacia nilotica* and *S. persica*. The same nest hole may be used in subsequent nesting seasons (Tiwari and Rahmani 1996). Both parents take part in domestic duties (Ali 1954–1955, Tiwari and Rahmani 1996). After fledging, the nestlings live in the vicinity of the nest for 4–5 days (Tiwari and Rahmani 1996).

Migration At one locality the birds disappeared for nearly three months after nesting, indicating that they may move locally, possibly in search of food (Tiwari and Rahmani 1996). The species's occurrence in Ajmer, mainly during the rainy season only till September, and its absence in cold weather (H. D. Watson in Whistler ms), support the notion that it may be subject to local movements, as does the fact that an individual turned up in a Dharwad garden having presumably "locally migrated" (Uttangi 1995).

THREATS The White-naped Tit is a somewhat mysterious bird whose apparently relictual distribution, and patchiness within that distribution, suggest a constitutive difficulty with more versatile competitors, i.e. a degree of specialisation that no longer confers any easily discernible advantages. Its population is under serious threat mainly from habitat loss, fragmentation, degradation, developmental activities and possibly nest-site limitation. The future of the western population in Gujarat and Rajasthan appears to be "very bleak" as "dry forest cover is diminishing rapidly" (Tiwari and Rahmani 1996). The tropical thorn-forest inhabited by the species in Kutch is under threat from clearance owing to local requirements for fuelwood (for illegal charcoal-making and bakeries), fodder, cultivable land and *Acacia* twigs for disposable toothbrushes (about 100 *Acacia* trees were being heavily lopped each day by about 40 families to meet the toothbrush needs of 50% of a local population of Kutch, i.e. 1,200,000 people, and thus was fast depleting the *Acacia* scrub cover in Kutch) (Tiwari and Rahmani 1996). In certain parts of the range (e.g. between north Gujarat and south-east Rajasthan), suitable habitat has been severely fragmented (owing to the growth of villages and towns), degraded (by cattle-grazing and lopping of trees for fodder) and destroyed (for agricultural land and residential areas) (Tiwari in prep.; also Tiwari and Rahmani 1996). Suitable habitat in excellent condition at the Narayan Sarovar Chinkara Sanctuary is or was also under threat from proposed cement factories (Tiwari and Rahmani 1996). In Mehsana district stone quarrying was found to be destroying what appeared to be a healthy thorn-scrub forest (Tiwari in prep.). In Ajmer region some of the forested hills were under threat from gypsum mining (Tiwari in prep.). Moreover, in certain areas the hills were covered with the exotic mesquite *Prosopis* (Tiwari in prep.), whose effect on the local dry environments in India is thought to be very serious (SS).

MEASURES TAKEN None is known. There is a single record from the fringe of Mudumalai National Park (K. D. Bishop *in litt.* 1998), suggesting that a small population might receive some protection from this area.

MEASURES PROPOSED There is an urgent need to establish a network of protected and well-managed habitats for the species in both its north-western and southern ranges. Suitable habitats need to be given official protection and pressures from local demands have to be alleviated. In Rajasthan important areas for the species exist near Beawar, Bar and Sendra forests, including Kumbhalgarh Wildlife Sanctuary in Pali district; the area between Javeshar, Jaswanth Pura, Devashwar Mahdeo and Silder in Jalore district; the private forest in the Sambhur Salt Works area of Nagore district; and Sendra Reserve Forest and the forested hills of Beawar areas in Ajmer districts (Tiwari in prep.). In addition, a major part of Kutch is still known to have tropical thorn-forest important to the species, especially near Dhinodhar, Dayapar, Moti Virani, Piyoni, Matanomadh, Khadir, Ramvada and Barendra, most of Abdhsa and Lakhpat talukas (Tiwari in prep.). Local people need to be educated and convinced of the conservation needs of the species and to be involved in conservation efforts: to meet local needs for fodder and fuel, social forestry initiatives must tackle wasteland development and the creation of village forests. The long-term survival of the species in Kutch depends on the dead and decaying trees within its habitat, so efforts should be made to conserve such substrates (Tiwari and Rahmani 1996). Also, to reduce wood-fuel consumption fuel-efficient stoves need to be introduced as a part of integrated rural development, and a major project is needed to provide cheap toothbrushes and suitable paste/powder for the people who use *Acacia* twigs traditionally.

Large tracts of suitable habitat around the Kaveri valley are still not surveyed and this forest area is contiguous with a similar tract of forest in neighbouring Tamil Nadu (SS). Systematic surveys by competent ornithologists in these areas would help establish the true status of the species in south India. Conservation efforts should target sites where habitats exist in good condition owing to religious practices (e.g. temple forests in Pali districts: Tiwari in prep.).