

BLACK-WINGED STARLING

Sturnus melanopterus

Critical —

Endangered A1a,d; A2b,d

Vulnerable C1

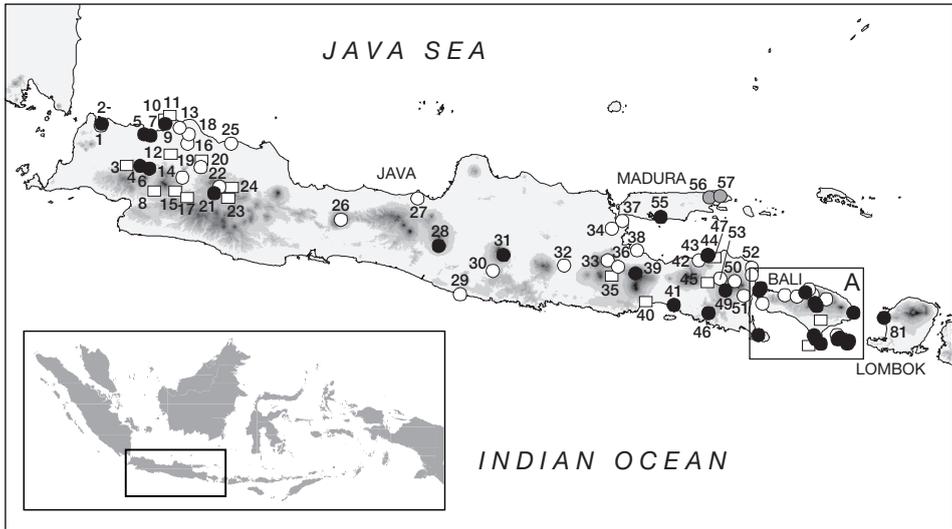


Although this starling was common until recently, its decline has been sufficiently dramatic to justify suspicion that future losses will exceed half of the population in the next 10 years, if the current trend is continued. This fact is a direct result of unsustainable exploitation for the cagebird trade and leads to its classification as Endangered.

DISTRIBUTION The Black-winged Starling (see Remarks 1) is distributed through West, Central and East Java, Bali and Lombok; if it is not a rare and local resident on Lombok (Coates and Bishop 1997) it may be an accidental visitor there (White and Bruce 1986) or even an escape, given the frequency with which birds are kept in captivity and transported within Java and its neighbouring islands (YPAL *in litt.* 1999, F. R. Lambert *in litt.* 1999). Its range has changed little over recent decades (and may even have expanded owing to increased cultivation), but within it birds have become much scarcer, to the point of extreme rarity and widespread local extinction. Records are from:

■ **INDONESIA** *Java* ■ **West Java** **Genteng Lebak**, Banten, April 1879 (Nicholson 1881); **Pulau Dua**, Banten, Serang county, February 1984 to June 1985 (Milton and Marhadi 1985), 1986–1995 (SvB); **Bolang Hilir**, 30 km west of Bogor, undated (specimen in RMNH); **Gunung Cibodas**, Ciampea, Bogor county, 1980–1984 (SvB); **Cengkareng**, Tangerang county, January 1989 (SvB); **Bogor**, occasionally in the Botanic Gardens and Tajur, 1981–1998 (SvB); **Jakarta**, for at least a century down to the present (Vorderman 1882–1885, van Oort 1910, Robinson and Kloss 1924b, Snouckaert van Schauburg 1926, Wilkinson *et al.* 1991a, SvB), including Brantas delta, Ancol and Tanjung Priok (Robinson and Kloss 1924b, Hoogerwerf and Siccama 1937–1938); **Caringin**, undated (specimen in RMNH); **Muara Gembong**, Bekasi county, undated (specimen and eggs in RMNH), March 1991 (SvB); **Gaga**, Karawang county, undated (specimen in RMNH); **Muara Bungin**, Karawang county, undated (specimen and eggs in RMNH); **Cibarusa** and the nearby lake of Situ Palahlar, Bekasi county, undated (specimen in RMNH); **Batujaya**, Karawang county, 1946–1949 (Mees 1946–1949); **Cikalongkulon**, Cianjur county, 1946–1949 (Mees 1946–1949); **Cikondang**, Subang county, undated (specimen in RMNH); **Kedunggede**, Cikarang, Bekasi county, 1946–1949 (Mees 1946–1949); **Cihe**, Bojongpicung, Ciranjang, Cianjur county, undated (specimen in RMNH); **Rengasdengklok**, Karawang county, November 1940 (three specimens in MZB); **Cikao**, Karawang county, undated (specimen in RMNH); **Purwakarta county**, rather common in 1950s (de Wiljes and van Balgooy 1957); **Bandung**, unknown until a number of birds were released from the zoo in wartime in 1942, they and/or their descendants still present in 1951–1954 (de Wiljes and van Balgooy 1957; see Remarks 2), in 1990 (H. Kobayashi verbally 1990) and even May 1999 (YPAL *in litt.* 1999); waterfalls at **Maribaya**, 1,200–1,300 m, Lembang, Bandung county, 1950s (de Wiljes and van Balgooy 1957); **Jatinangor**, c.900 m, Sumedang county, undated (specimen in RMNH); **Cijambu**, Gunung Manglayang, Bandung county, undated (eggs in RMNH); **Pamanukan**, Subang county, 1950s (de Wiljes and van Balgooy 1957); ■ **Central Java** **Gunung Slamet**, 700 m, above Purwokerto, abundant in the 1950s (de Wiljes and van Balgooy 1957); **Pegandon** (Pegaden), Pekalongan county, 1950s (de Wiljes and van Balgooy 1957); **Kinah Rejo**, foot of Gunung Merapi, 1996 (YPAL *in litt.* 1999); **Rongkop**, Gunung Kidul county, Yogyakarta, June 1936 (Bartels and Bouma 1937); **Jatiroto**, Jember, July 1953 (de Wiljes and van Balgooy 1957);

■ **East Java Plaosan**, Gunung Lawu, Magetan county, October 1988 (SvB); **Kediri**, 1895–1897 (Bartels 1902, 1906, Becking 1989; specimen in RMNH); **Gunung Arjuno**, November–December 1927 (18 specimens in AMNH); “Drio” (probably **Driorejo**), Surabaya, undated (Vorderman 1899; specimen in RMNH); **Malang**, August of an unstated year (three specimens in AMNH); **Lawang**, November 1886 (female in AMNH); **Surabaya**, 1895–1897 (Bartels 1902, 1906, Becking 1989; specimen in RMNH), May 1929 (Kuroda 1933–1936), early 1930s (Berlioz 1935), and July–August 1951 (eight specimens in BMNH); **Pasuruan**, July 1892 (specimen in MZB, Vorderman 1899; specimen in RMNH); **Pegunungan Tengger** (Tengger Mountains), 400–2,400 m, at various localities including Bromo, Tosari or Telogosari, Nongkojajar, Gubuklakah and Ranu Pani, from 1890s to 1990s (Whitehead 1893, Kuroda 1933–1936, Berlioz 1935, Mees 1996, SvB; eight specimens in MZB); **Dampar**, undated (eggs in RMNH); **Gumukmas**, Puger, south of Lumajang, October 1988 (SvB); **Buduan**, Besuki, Panarukan,



The distribution of Black-winged Starling *Sturnus melanopterus*: (1) Genteng Lebak; (2) Pulau Dua; (3) Bolang Hilir; (4) Gunung Cibodas; (5) Cengkareng; (6) Bogor; (7) Jakarta; (8) Caringin; (9) Muara Gembong; (10) Gaga; (11) Muara Bungin; (12) Cibarusia; (13) Batuujaya; (14) Cikalongkulon; (15) Cikondang; (16) Kedunggede; (17) Cihea; (18) Rengasdengklok; (19) Cikao; (20) Purwakarta county; (21) Bandung; (22) Maribaya; (23) Jatinangor; (24) Cijambu; (25) Pamanukan; (26) Gunung Slamet; (27) Pegandon; (28) Kinah Rejo; (29) Rongkop; (30) Jatiroto; (31) Plaosan; (32) Kediri; (33) Gunung Arjuno; (34) Driorejo; (35) Malang; (36) Lawang; (37) Surabaya; (38) Pasuruan; (39) Pegunungan Tengger; (40) Dampar; (41) Gumukmas; (42) Buduan; (43) Kembang Sambi; (44) Curah Udang; (45) Sukowono; (46) Meru Betiri National Park; (47) Klatakan; (49) Gunung Raung; (50) Gunung Ijen; (51) Tamansari; (52) Baluran National Park; (53) Bajulmati; (54) Alas Purwo National Park; (55) Sampang; (56) Manding; (57) Batang Batang; (58) Gilimanuk; (59) Bali Barat National Park; (60) Candikusuma; (61) Grogkak; (62) Bubunan; (63) Lovina; (64) Ulu Watu; (65) Buleleng; (66) Gitgit; (67) Petitenget; (68) Bedugul; (69) Suwung; (70) Baturiti; (71) Kuta; (72) Nusa Dua; (73) Ubud; (74) Kintamani; (75) Seraya; (76) Nusa Ceningan; (77) Karangjawa; (78) Pundukakaja; (79) Sekartaji; (80) Tanglad; (81) Senggigi.

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

February 1923 (five specimens in MZB), including at Wonorejo, November 1936 (two males in MZB); **Kembang Sambi**, north of Gunung Ringgit, 1996 (YPAL *in litt.* 1999); **Curah Udang**, north-west of Gunung Ringgit, November 1992 (A. P. Setiadi and I. Setiawan *in litt.* 1999); **Sukowono**, Besuki, Panarukan, undated (specimen in RMNH); **Meru Betiri National Park**, Jember, 1981–1990 (SvB), July 1994 (Tobias and Phelps 1994); **Klatakan**, undated (specimen in RMNH); **Gunung Raung**, Jember/Banyuwangi, undated but evidently widespread (Bartels 1921), February 1923 (male in MZB), 1997 (YPAL *in litt.* 1999), including Sumberwringin, north-west slope on the Ijen highlands, Bondowoso county, undated (specimen in RMNH; Bartels 1921); **Gunung Ijen**, May–June 1924 (three specimens in MZB); **Tamansari**, 480 m, January 1920 (female in BMNH; also Robinson and Kloss 1924b); **Baluran National Park**, Banyuwangi, 1936 to present day although diminishing in numbers (three specimens in MZB, Tobias and Phelps 1994, SvB, many observers *in litt.* 1999); **Bajulmati**, Banyuwangi county, January–February 1920 (Robinson and Kloss 1924b); **Alas Purwo** at Sadangan, May 1990 (SvB); Arendong (untraced on Java), Banten, March 1879 (Nicholson 1881); Gemongkung (untraced on Java), June 1926 (female in MZB);

Madura Sampang, January 1992 (SvB); **Manding**, Sumenep, April 1970 (specimen showing pure *melanopterus* features in MZB); **Batang Batang**, Sumenep, April 1970 (specimen showing pure *melanopterus* features in MZB; see Remarks 3);

Bali Gilimanuk, June or July 1991 (Heath 1991); **Bali Barat National Park** at (e.g.) Sumberklampok, Makam Jayaprana, Teluk Terima and Goris, from 1920s to present day (von Plessen 1926b, Ash *et al.* 1987, SvB, many observers *in litt.* 1999); **Candikusuma**, April 1932 (Dupond 1942); **Groggak**, Buleleng, September 1930 (Kuroda 1932); **Bubunan**, Buleleng, September 1930 (Kuroda 1932); **Lovina**, Kalibubuk, Buleleng, 1981 (SvB); **Ulu Watu**, Badung, March 1984 (C. F. Mann *in litt.* 1999), 1980s (Ash *et al.* 1987); **Buleleng**, January and March 1913 (Stresemann 1913); **Gitgit** and/or environs, 500 m, 1890s to 1927 (Stresemann 1913, Rensch 1930); **Petitenget**, 1980s (Ash *et al.* 1987); **Bedugul** at the Bali Handara golf-club greens and fairways, Tabanan, undated (Mason and Jarvis 1989); **Suwung**, Badung, 1980s (Ash *et al.* 1987); **Baturiti**, 800 m, 1927 (Rensch 1930); **Kuta**, March 1984 (C. F. Mann *in litt.* 1999); **Nusa Dua** resort hotels, Badung, 1980s (Mason and Jarvis 1989), August 1986 (W. Beisenherz *in litt.* 1999); **Ubud**, Gianyar, 1980s (Mason 1985, Ash *et al.* 1987); **Kintamani**, up to 1,200 m, February 1911 (Stresemann 1913), July–August 1925 (von Plessen 1926b), 1927 (Rensch 1930) and in 1930s (Berlioz 1935); **Seraya**, October 1928 (two females in MZB), 1980s (Ash *et al.* 1987); Batu Meringit (untraced), October 1928 (female in MZB), recently (Ash *et al.* 1987);

Lembongan Nusa Ceningan, Klungkung, March 1938 (Meise 1941);

Nusa Penida Karangjawa, Klungkung, May 1986 (van Helvoort *et al.* 1986b); **Pundukakaja**, Klungkung, May 1986 (van Helvoort *et al.* 1986b); **Sekartaji**, Klungkung, May 1986 (van Helvoort *et al.* 1986b, Ash *et al.* 1987; see Remarks 4), and August 1999 (YPAL *in litt.* 1999); **Tanglad**, Watas, August 1999 (YPAL *in litt.* 1999);

Lombok Senggigi, June 1993 (G. M. Bass *in litt.* 1993); northern Lombok, June 1896 (Hartert 1896c, White and Bruce 1986).

Extralimitally, a group of 15 birds, evidently escapes, were seen on St Johns Island, Singapore, in January 1983 (P. Alström and U. Olsson *in litt.* 2000), with eight birds there in August 1988 (D. Cooper and F. Cooper *in litt.* 1999). This population was known to be breeding (Hails 1987) but by 1990 was in decline (Feare and Kang 1992) and by 1994 was thought extinct (Feare and Craig 1998). However, the species has been reported breeding on Singapore proper (Feare and Craig 1998).

POPULATION The species was formerly common in the plains of East Java (Nicholson 1881, Whitehead 1893, Berlioz 1935), and in general the evidence points to it having been locally common throughout its range, e.g. at several sites (notably Gunung Slamet) in West

Java into the 1950s (de Wiljes and van Balgooy 1957); however, Kuroda (1933–1936) thought it “not abundant” in East Java. By the 1960s, it was “...certainly not a common bird in West Java, though locally not exactly rare” (Hellebrekers and Hoogerwerf 1967). Flocks of 4–20 used to be seen in the Bogor Botanical Gardens, 1981–1992, but no birds at all have been found in recent visits there (K. D. Bishop *in litt.* 2000). In Baluran National Park the species was common in 1993–1994, with as many as “a dozen daily” (Myers 1994), yet only a few could be found in May 1999 (I. Mauro *in litt.* 1999) and none was seen there in July 1999 (K. D. Bishop *in litt.* 2000).

On Bali in the 1920s it was frequently observed, mostly in flocks of 6–10 birds, in the southern lowlands of the island (Rensch 1930), and it was then common in cultivation in the east, although rather scarce in the areas where Bali Starling *Leucopsar rothschildi* occurred (von Plessen 1926b). However, a roost of c.400 birds was found in Bali Barat National Park, with regular flocks of 50–100 although mostly 20–50, in the period 1983–1987 (B. van Helvoort *per SvB*), and indeed in assessing the species’s competitive potential with the Bali Starling it was then judged that it was three to ten times as common a bird in the park (van Helvoort *et al.* 1986a); since the number of Bali Starlings was then judged to be around 100 (see relevant account), the population of Black-winged Starlings would have been 300–1,000. The species was still fairly common the park in February 1999 (I. Mauro *in litt.* 1999), but short-term visitors there are finding it sufficiently rare that they can no longer be certain to see it (K. D. Bishop *in litt.* 1999). The population on Lombok appears to be extremely small (see Distribution and, below, Ecology: Migration).

The decline throughout its range has been so rapid that it was completely missed in a recent review of the species, where it is described as “common and widespread on Java and Bali” (Feare and Craig 1998).

ECOLOGY Habitat The Black-winged Starling frequents open grass savanna, teak forest, dense second-growth forest, cultivated areas, pastures, fallow land and fruit farms (Nicholson 1881, Sody 1953, Feare and Craig 1998). It is more a species of rural than urban areas (Koens 1913), mainly found in the extreme lowlands although occasionally ranging up to 1,200–1,300 m in West Java (de Wiljes and van Balgooy 1957) and up to 2,400 m in East Java (Whitehead 1893, Kuroda 1933–1936, SvB). Berlioz (1935) found it in uncultivated bushy valleys on the slopes of Kintamani (Bali), far from human settlement. On Pulau Dua it has been found in *Diospyros* forest, herb and shrub areas, and *tambak* (fish- and shrimp-ponds) (Milton and Marhadi 1985). Birds are often seen foraging on the ground near the coast in western Bali, preferring the neighbourhood of cows and water buffaloes (von Plessen 1926b, Hoogerwerf and Siccama 1937–1938). At dawn birds often undertake direct flights over some distance, well above the canopy, to their foraging areas, quite unlike the early-morning movement pattern of Bali Starlings (van Helvoort *et al.* 1986a). They roost in trees, but also “even on houses in cities” (MacKinnon and Phillipps 1993), although such a phenomenon seems likely to be a thing of the past.

Food The species forages both on the ground (in grassland and on beaches) and in trees (Feare and Kang 1992). It also takes food on the backs of buffaloes (Nicholson 1881, Olivier 1929). Food reported includes (animal) grasshoppers, Blattidae, Mantidae, the beetle *Coccinella repanda*, termites, caterpillars of *Terius hecabe* and Dermaptera; (vegetable) fruits of *Lantana camara*, *Antidesma bunius*, *Phytolacca*, *Morus indica*, *Manilkara kauki*, *Passiflora foetida* and *Strychnos ligustrina*, rice seeds and nectar of *Spathodea campanulata* and *Bombax vaeletonii* (Koens 1913, Sieber 1978, Becking 1989). A small group of introduced birds in Singapore took nectar from the madras thorn *Pithecellobium dulce* and fruits of *Fagraea fragrans* and *Eugenia longiflora*, probed the ripe pods of *P. dulce* and the bases of terminal rosettes of *Casuarina*, and foraged invertebrates in *Ipomoea* bushes, along the strand line, and on the ground near a termite mound (Feare and Kang 1992).

Breeding The species has been described as a colonial breeder (Feare and Craig 1998), but the source cited for this information (de Wiljes and van Balgooy 1957) was in reality addressing an isolated breeding population, which may have misinterpreted as a “colony” (SvB). The breeding season appears to be rather extended or perhaps locally variable. Birds at Bandung (West Java) have been found breeding in May (YPAL *in litt.* 1999). Records of eggs in East Java stem from March, May (Hellebrekers and Hoogerwerf 1967) and June (Sody 1930), but breeding has probably occurred in January (Hoogerwerf 1949), given a nest with small hatchlings in February (Hoogerwerf and Siccama 1937–1938), and specimens with swollen gonads have been taken in August (Rensch 1930). A bird collected in June, Lombok, was juvenile (Hartert 1896c). Birds breed in tree holes, e.g. “Regenbomen” *Samanea* (de Wiljes and van Balgooy 1957) and *Acacia* (Feare and Craig 1998), leaf joints of palms (de Wiljes and van Balgooy 1957), nestboxes in Bali Barat National Park (B. van Helvoort *in litt.* 1998, SvB) and inaccessible crevices in rocks (de Wiljes and van Balgooy 1957), this latter being the preferred type of site on Penida, although birds there also use nestboxes erected by locals to harvest their young (as many as three nesting attempts being made per season) (YPAL *in litt.* 1999). Three or four eggs are laid per clutch (Sody 1930, Hellebrekers and Hoogerwerf 1967).

Migration In Bali Barat flocks of 50–100 were thought to make large movements following flowering and fruiting of trees (Ash *et al.* 1987). So few are the records from Lombok that the species was speculated to be an accidental visitor, but the fact that one of four specimens taken in June 1896 was juvenile suggests local resident status (White and Bruce 1986).

THREATS The precipitous decline in the Black-winged Starling appears to be attributable to one main factor, human exploitation as a cagebird. Whether, however, other threats, including pesticide contamination and even habitat loss, are also to blame remains open to speculation and in need of study.

Trade Java is well known for its cultural attachment to birds in captivity—in Javanese tradition every man was expected to have five things: a job, a house, a horse or carriage, a wife and a bird (Whitten *et al.* 1996). The almost total disappearance of the Black-winged Starling from most parts of its range is apparently an example of the power that relentless live animal trade can exert, and which has turned all open and semi-open landscapes on Java into the eerily birdless spaces for which the island has become so notorious (“nothing flies across the road, soars overhead or hops about in a hotel garden”) (Jepson and Ounsted 1997; also Diamond *et al.* 1987, Whitten *et al.* 1996). The worst affected by this dominant cultural interest in caged wildlife, in global terms, are inevitably those animals with the best qualities (looks, voices, abilities) and the smallest ranges, and a handsome and distinctive bird such as this, confined to lowland areas in Java, Bali and Lombok, was predictably (but not, alas, predicted to be) a candidate for serious decline. In fact, amongst the starlings, the Asian Pied *Sturnus contra* has fared far worse on Java than the Black-winged (SvB), but mercifully has a much wider range.

Pesticides A contributory factor to the species’s rarity could be agricultural pesticides, as it is a bird often found in open agricultural areas (see, e.g., van Balen *et al.* 1993; also Threats under Java Sparrow *Padda oryzivora*).

Habitat loss Under Ecology it appears that the Black-winged Starling is a species largely of uncultivated savanna areas, and it may be that intensification of agriculture and either the clearance or plantation of certain patchwork areas of low-lying woodland and grassland have been inimical to it.

MEASURES TAKEN This species has been protected under Indonesian law since 1979 (Inskipp 1986). This was initially a measure to underscore legal protection for the rather similar-looking Bali Starling *Leucopsar rothschildi* (SvB). It is worth noting that the species

benefited from another measure intended for the Bali Starling—namely, the erection of nest-boxes in Bali Barat National Park: at least five pairs of Black-winged Starlings were found breeding in these boxes in June 1989, although *Leucopsar* never, or barely ever, used them (van Balen *et al.* 1990). A recent registration campaign, in which all birds had to be reported to the local PHPA, was only partly applied to this species because of the huge numbers in captivity; mainly birds belonging to the West Javan race were registered (SvB). The species has been recorded in Meru Betiri, Baluran and Bali Barat National Parks (see Distribution), but evidently these places offer little or no shelter from illegal trapping.

MEASURES PROPOSED Clearly if the law were enforced properly, and if pesticide use and habitat loss on Java play no part in its decline, then the Black-winged Starling might remain relatively numerous. Authorities need to do far more to impose the law on traffickers, but also to revive the registration scheme for birds already in captivity. This species may well be one which, given strict protection, would rapidly recover its numbers, and ideally this is the first requirement in some key or core areas. A carefully planned formal captive-breeding scheme is required by various institutions holding birds, including those outside Indonesia, to ensure that new generations of the captive population are secured, and a recovery plan is needed to determine the most appropriate further courses of action, which would be likely to include re-introduction and/or restocking of certain areas, strong protection for both areas and birds, and strong protection also for populations which can be expected to recover without new stock.

A thoroughgoing (at least three-year) study of the year-round ecology and needs of the species, using marked birds, is also required. This study should be undertaken in an area where the birds are at least risk from capture, so that a full profile of the species can be built up and used in future management, and should focus on habitat use, feeding ecology and breeding success, with a rigorous measurement of chemical usage in and its impact on the local environment. The fact that the species appears to take readily to nest-boxes (see above) should also be remembered if ever there is scope for establishing a relatively secure enclave in which nest sites may be limited.

REMARKS (1) Feare and Kang (1992) proposed putting this species in *Acridotheres* on morphological and behavioural grounds, and Feare and Craig (1998) did so. It occurs in three races: *melanopterus* in West and Central Java, *tricolor* in East Java, and *tertius* in Bali (Mees 1996). Birds found on Madura were of the West Java type, but also a bird seen on Bromo (Tengger mountains), which lies on the boundary between the nominate and *tricolor*, had more white in the wing than usual for East Javan birds (Mees 1996). (2) A number were released from the zoo in wartime in 1942 in Bandung, from where the species was unknown and were still seen afterwards in 1951–1954 (de Wiljes and van Balgooy 1957) and in 1990 (H. Kobayashi verbally 1990). (3) A specimen obtained from bird traders and stored in MZB reportedly (but very doubtfully) originates from Madura; it shows the features of *tricolor* (SvB). (4) Birds at Sekartaji, Nusa Penida, 1986, had the plumage of the western race *melanopterus* (van Helvoort *et al.* 1986b), and were therefore perhaps escapes from captivity.