

# Threatened Birds of Asia:

## The BirdLife International Red Data Book

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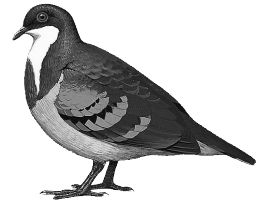
## MINDANAO BLEEDING-HEART

### *Gallicolumba criniger*

Critical  —

Endangered  C1

Vulnerable  A1c,d; A2c,d; C2a



*This pigeon has been upgraded to Endangered because it is inferred to have a very small population that is undergoing a continuing rapid decline owing to widespread destruction of its lowland forest habitat.*

**DISTRIBUTION** The Mindanao Bleeding-heart is endemic to the Philippines in three races distributed between six islands (see Remarks 1): *leytensis* on Samar, Leyte and (presumably this race) Bohol, nominate *criniger* on Dinagat and Mindanao, and *bartletti* on Basilan. In 1972 it was predicted that the species would be present on Siargao (duPont and Rabor 1973b). Precise locality records (north to south) are as follows:

■ **PHILIPPINES** *Samar* **San Isidro**, May 1957 (male in AMNH); **Matuguinao** at 100–400 m, April 1957, and **Mt Capoto-an** at 400–600 m, May 1957 (Rand and Rabor 1960; six specimens in FMNH, one in AMNH); **San Rafael**, Taft, May 1970 (specimen in PNM); **Buluan**, Calbiga, April and May 1969 (two males in PNM); **Borongan**, with no date (de Elera 1895); **Tipawala**, Llorente, July 1970 (male in PNM);

*Leyte* (see Remarks 2) **Mt Lobi**, May and June 1964 (Parkes 1973); **Mt Kabalanti-an** at Paniniklan, Mahaplag, 150–300 m, June 1964 (four specimens in DMNH, FMNH; also Parkes 1973); **Balinsasayao** at Abuyog, July 1961 (Parkes 1973, female in AMNH); **Helosig**, midway between Baybay and Abuyog, May 1937 (Rabor 1938);

*Bohol* **Rajah Sikatuna National Park**, 1989–1994 (Buck *et al.* 1990, Lambert 1993c, Brooks *et al.* 1995, P. A. J. Morris *in litt.* 1994), January 1997 (F. Verbelen *in litt.* 1997);

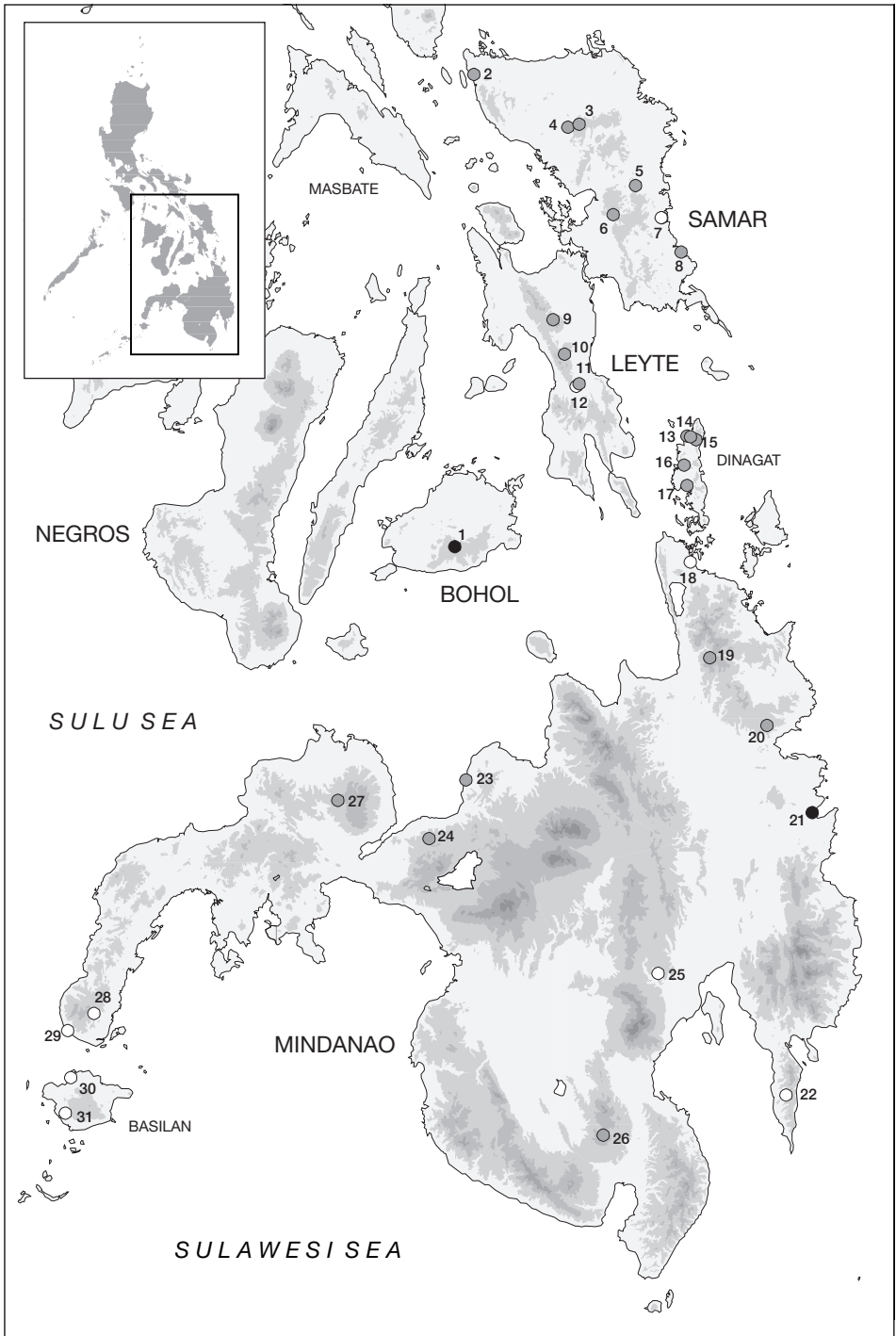
*Dinagat* **Mt Kambinlio**, **Mt Redondo** and **Omasdang**, Loreto, March 1972, **Balitbiton**, Loreto, April 1972, and **Plaridel**, Albor, April 1972 (five specimens in DMNH; also duPont and Rabor 1973b);

*Mindanao (eastern)* **Placer**, July 1877 (Tweeddale 1877b); **Mt Hilong-hilong** at Bondo-an, 600–750 m, May 1963 (female in DMNH); **Mt Diwata**, Diatagon, Lianga, Surigao del Sur, 500–600 m, May 1976 (BRT); **Bislig** at the PICOP Concession, March 1991 (N. J. Redman *in litt.* 1996), 1993 (I. Gardner *per J. Hornbuckle in litt.* 1994); “**Agustin Peninsula**”, 1927–1928 (Hachisuka 1941); (*central*) **Manticao** at Mainit, April and May 1968 (three specimens in FMNH, UMMZ); **Tambo**, Munai, Lanao del Norte, 450–600 m, June 1967 (male in DMNH); **Davao**, May and August 1889 (two specimens in RMNH), and February and April 1938 (two specimens in DMNH); **Mt Matutum**, Tupi, Cotabato, June 1966 (female in UPLB), including at Balisong, Kablon, Tupi, Cotabato, February 1962 (two specimens in AMNH); (*western*) **Mt Malindang** in 1978 (Catibog-Sinha 1994); **Zamboanga**, March and April 1878 (Tweeddale 1878h, male in MCML); **Ayala**, October 1887 (male in BMNH) and March 1898 (male in AMNH);

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**The distribution of Mindanao Bleeding-heart *Gallicolumba criniger* (map opposite; sequence not as in text):** (1) Rajah Sikatuna National Park; (2) San Isidro; (3) Mt Capoto-an; (4) Matuguinao; (5) San Rafael; (6) Buluan; (7) Borongan; (8) Tipawala; (9) Mt Lobi; (10) Mt Kabalanti-an; (11) Balinsasayao; (12) Helosig; (13) Balitbiton; (14) Omasdang; (15) Mt Redondo; (16) Plaridel; (17) Mt Kambinlio; (18) Placer; (19) Mt Hilong-hilong; (20) Mt Diwata; (21) Bislig; (22) Agustin Peninsula; (23) Manticao; (24) Tambo; (25) Davao; (26) Mt Matutum; (27) Mt Malindang National Park; (28) Zamboanga; (29) Ayala; (30) Isabela; (31) Atong Atong.

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



*Basilan Isabela*, August 1891, and nearby, December 1906 to March 1907 (four specimens in CM, USNM; also McGregor 1907a); and *Atong Atong*, February 1906 (male in USNM), with unspecified localities in June and August 1925 (Kuroda 1927).

**POPULATION** The declared rarity of this bird (Dickinson *et al.* 1991) must first be set against the fact that it is clearly highly capable of self-concealment, Newman (1909) reporting how newly arrived captive birds “had a wonderful way of hiding behind bushes and of putting objects between themselves and the observer” (see also Ecology). McGregor (1909–1910) quoted F. S. Bourns and D. C. Worcester as describing the species as “fairly abundant on Basilan, but much rarer in Samar”, although McGregor (1907a) himself simply noted “but three specimens... obtained” on Basilan in three months of collecting, 1906–1907. Newman (1909) quoted a letter from the collector W. Goodfellow, who reported that “they are by no means common in their own country, and are very locally distributed around the somewhat drier parts of the coast lands”. On Leyte in 1938 the species was “very rare in the highland vicinities” (Rabor 1938). On Dinagat in March/April 1972 it was “not really rare” but “not as frequently encountered... as it should have been” (duPont and Rabor 1973b). There are post-1980 records from only two localities, one on Mindanao and one on Bohol; there have been no records from Samar since 1970, Leyte since 1964, Dinagat since 1972 and Basilan since 1925. Given the constraints on this bird (see Ecology and Threats), its numbers must be very greatly depleted.

**ECOLOGY** *Habitat* All *Gallicolumba* live on the forest floor, only perching in trees when roosting, taking cover or breeding, and if possible run very rapidly, in preference to flying, in order to make an escape (McGregor 1909–1910, Delacour 1932). This particular species has been characterised as an inhabitant of primary and secondary forest (Dickinson *et al.* 1991, C. R. Robson *in litt.* 1994), especially the dipterocarp and transition dipterocarp–mid-mountain types in the lowlands and in the lower elevations of the hills and mountains up to c.400 m, where it was usually found on strips of flatter ground (such as small valleys) with only sparse undergrowth (duPont and Rabor 1973b). On Samar it was judged “to prefer the drier parts of the forests, notably on hillsides, and where there was not much low undergrowth” (Rand and Rabor 1960). The highest elevation recorded under Distribution is 750 m, which certainly places the species in the zone of greatest danger to wildlife in the Philippines; on Bohol the elevation of records appears to be around 250–300 m (C. R. Robson *in litt.* 1997). The testimony of W. Goodfellow (quoted under Population, from Newman 1909) may be helpful in suggesting the importance of drier parts of coastal areas.

*Food* Food is taken from the forest floor (Dickinson *et al.* 1991). In captivity birds showed a preference for insects, with mealworms being particularly favoured (Delacour 1932).

*Breeding* Four of the seven birds taken on Samar (see Distribution, also Rand and Rabor 1960) in April and May 1957 had their gonad condition recorded as developed (three active males, April and May, one active female, April), with a further male partially developed in May (AMNH, FMNH label data). A female from Dinagat (Balitbiton) had an active ovary in April, and one from Mindanao (Bondo-an) likewise in May. One of two birds taken on Leyte (Paniniklan), June, was juvenile; this is, however, also the case with a male from Zamboanga, April (in BMNH; also Tweeddale 1878h), the only evidence to indicate (perhaps only for the Zamboanga Peninsula) divergence from a late-summer, rains-related breeding cycle (March–June). A nest with one freshly laid egg was found on Mt Capoto-an, Samar, in mid-May 1957: a typical flimsy pigeon structure of “sticks (twigs and bamboo)... lined with bamboo leaves... placed exactly on the axil formed by a horizontally placed leaf and the main stem... about [1.3 m] from the ground, in original forest on top of a ridge about 400 metres in altitude” (Rand and Rabor 1960). In captivity the nest is placed on a low bush, generally with a clutch of one (Delacour 1932). In the summer of 1864 a pair bred five times

in London Zoo, the female on each occasion laying a single egg and making “a very slight nest of small sticks” in a basket provided for her; the incubation period was 15 days (Sclater 1865). These facts were confirmed by Newman (1909), whose pair laid one egg in each of five nesting attempts through 1908, the nest itself being a flimsy affair placed in one case little over 1 m up in some ivy; notable observations were that the egg was strikingly large compared to the body of the parent (Luzon Bleeding-heart *G. luzonica* and Mindoro Bleeding-heart *G. platenae* lay two eggs per clutch), that the legs of hatchlings are “enormously developed”, that incubation lasted around 17 days, and that although the nestling’s tail remained invisible for a month its legs and wings grew so rapidly that sustained flight was possible within 16 days of hatching. All these traits indicate adaptation for survival as a ground-dwelling species.

**Migration** There is no information on movements in this bleeding-heart, but a degree (at least) of nomadism or elevational displacement needs to be anticipated (i.e. actively researched) as a component of conservation planning for the species.

**THREATS** Forest destruction throughout Mindanao, particularly at the lower elevations, has been extensive in the course of this century, with relatively little habitat remaining below 1,000 m; it is inevitable that so much loss will have had a major and continuing effect on populations of this species (Collar *et al.* 1994). The deliberate conflagration of forests on the island—associated with insurgency—is a problem, particularly on the Zamboanga Peninsula (D. Allen verbally 1997), while at Bislig good primary forest is being clear-felled (under the PICOP logging concession) and the land planted with exotic trees for paper production (B. Gee *in litt.* 1997; also Caufield 1983). On Siargao, where the species was predicted to occur, there was already relatively little forest left in 1972, while on Dinagat the situation was much better (duPont and Rabor 1973b). Now, however, although illegal logging is still a problem on Dinagat, chromite surface-mining (about five companies) is considered the most important threat on the northern portion of the island; practically all its lowland forest is already gone (BRT and NADM). It is not clear what proportion of forest has been lost on Samar and Leyte, where mining applications are a severe potential threat (NADM), but the situation is thought to be similar to that on Bohol, which currently retains a mere 4% forest cover (T. M. Brooks verbally 1997). Certainly PEWG (1996), using 1989 DENR statistics, credited Samar and Leyte with possessing as little as 433 km<sup>2</sup> of old-growth dipterocarp, but other sources of information put forest cover considerably higher (see Threats *Habitat loss* for Samar and Leyte under Philippine Eagle *Pithechophaga jefferyi*). At Rajah Sikatuna National Park on Bohol, limited illegal tree-cutting was observed in January 1997 (B. Gee *in litt.* 1997), although Brooks *et al.* (1995c) had considered such threats minimised by the management activities of DENR. In addition, trapping for trade or for food is a problem with all ground-dwelling birds in the Philippines. Very little information relates to this kind of exploitation of the Mindanao Bleeding-heart, but Delacour (1932) referred to around 100 birds being imported into the UK in 1931.

**MEASURES TAKEN** Mt Malindang on Mindanao is a NIPAP site (see Appendix). In addition, Rajah Sikatuna National Park offers protection on Bohol, as may the watershed reserve at Mt Hilong-hilong on Mindanao, while conservation-related activities on Dinagat Island (relevant “key site” being Kambinlio/Redondo) and Mt Matutum have been proposed for FPE funding (see Appendix). Laws geared to reducing hunting exist throughout the range of the species, but are violated with impunity.

**MEASURES PROPOSED** The preservation of sufficiently large areas of suitable habitat is the priority for this species. Apart from the areas targeted for conservation above, it is known from three “key sites” (Mt Lobi range on Leyte; Mt Diwata on Mindanao; Central Basilan;

see Appendix) and these deserve formal designation, at least in part, under the NIPAS process (always bearing in mind that the areas protected must include substantial areas of primary forest below 750 m to be of value to this species). Several other localities from which records of the species derive appear to have been embraced by one-time protected areas (e.g. Sohoton Natural Bridge National Park on Samar; Mahagnao Volcano National Park, Balinsasayao National Park and Lake Danao National Park on Leyte); the status and current avifauna of these areas need review, and conservation measures should be reinforced where appropriate. In conjunction with these measures, the effective enforcement of trapping and hunting laws is a secondary objective.

**REMARKS** (1) The type locality was stated to be Jolo, but this was altered to Mindanao by Hartert (1918), based principally on the fact that F. S. Bourns and D. C. Worcester saw a *Gallicolumba* on Jolo but dismissed the notion that it could refer to *criniger* on biogeographical grounds (see McGregor 1909–1910). The view that the species could not have come from Jolo seems to have transmuted into the unjustifiable view that it *did not* come from Jolo. (2) The species was “obtained” in northern Leyte in August 1896 (Ogilvie Grant 1897, Whitehead 1899d) but the whereabouts of the specimen material is unknown.