

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

Recommended citation

BirdLife International (2001) *Threatened birds of Asia: the BirdLife International Red Data Book*. Cambridge, UK: BirdLife International.

© 2001 BirdLife International

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

Tel: +44 1223 277318 Fax: +44 1223 277200 Email: birdlife@birdlife.org.uk

Internet: www.birdlife.net

BirdLife International is a UK-registered charity

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, electrical, chemical, mechanical, optical, photocopying, recording or otherwise, without prior permission of the publisher.

ISBN 0 946888 42 6 (Part A)

ISBN 0 946888 43 4 (Part B)

ISBN 0 946888 44 2 (Set)

British Library-in-Publication Data

A catalogue record for this book is available from the British Library

First published 2001 by BirdLife International

Designed and produced by the **Nature**Bureau, 36 Kingfisher Court, Hambridge Road, Newbury, Berkshire RG14 5SJ, United Kingdom

Available from the Natural History Book Service Ltd, 2–3 Wills Road, Totnes, Devon TQ9 5XN, UK. Tel: +44 1803 865913 Fax: +44 1803 865280 Email nhbs@nhbs.co.uk
Internet: www.nhbs.com/services/birdlife.html

The presentation of material in this book and the geographical designations employed do not imply the expression of any opinion whatsoever on the part of BirdLife International concerning the legal status of any country, territory or area, or concerning the delimitation of its frontiers or boundaries.

RED-AND-BLUE LORY

Eos histrio

Critical —

Endangered A2c,d; B1+2a,b,c,d,e

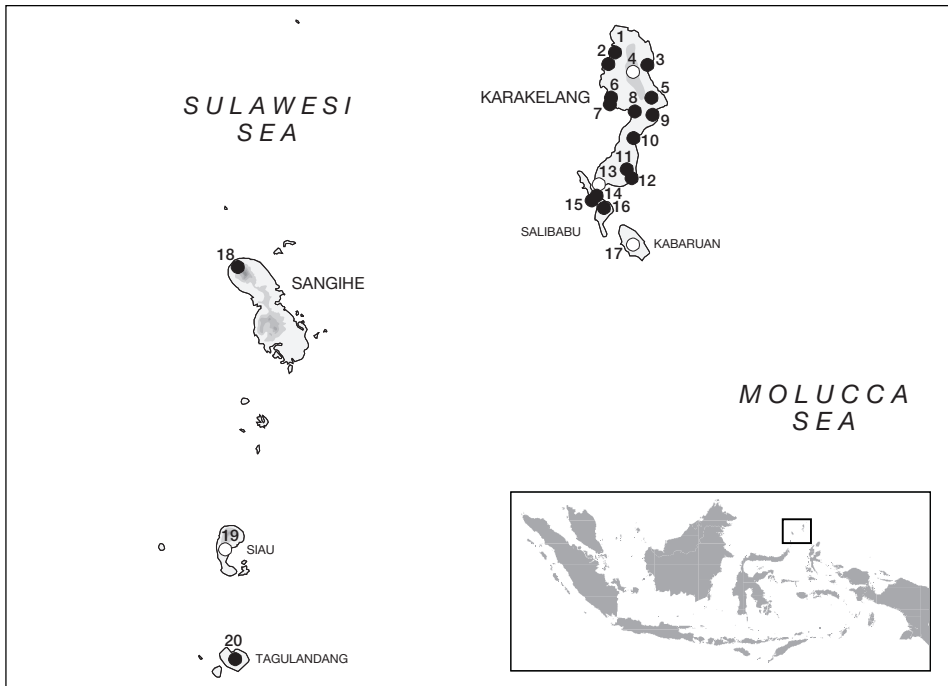
Vulnerable A1c,d; C1



This parrot has a very small range (being known from few locations) which is declining owing to habitat loss. It has undergone a rapid population decline, largely as a result of trapping for trade, and this is projected to increase in the future. It therefore qualifies as Endangered.

DISTRIBUTION The Red-and-blue Lory is confined to the islands of Sangihe and Talaud and some of their outliers off northern Sulawesi, Indonesia, with nominate *histrio* on Sangihe, subspecies *talautensis* on the Talaud Islands, and subspecies *challengeri* of uncertain provenance (see Remarks 1). There was also some uncertainty about the smaller islands from which the species has been claimed (see Remarks 2). Records (which on Karakelang give a mistaken impression of patchy local distribution: F. R. Lambert *in litt.* 1999) are from:

■ **INDONESIA** *Karakelang* in the nineteenth century (Meyer and Wilesworth 1894, 1895a); **Esang**, nineteenth century (Meyer and Wilesworth 1895a), 1995 (Riley 1997a,b); **Kuma**, 1995 (Riley 1997a,b); **Amat**, 1995 (Riley 1997a,b); **Gunung Duata**, May 1926 (female in MZB); near



The distribution of Red-and-blue Lory *Eos histrio*: (1) Esang; (2) Kuma; (3) Amat; (4) Gunung Duata; (5) Toabatu; (6) Rae; (7) Lobo; (8) Beo; (9) Rainis; (10) Pulutan; (11) Bowoni Baru; (12) Tule; (13) Melongguane; (14) Musi; (15) Sere; (16) Lirung; (17) Kabaruan; (18) Talawid Atas; (19) Siau; (20) Tagulandang.

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

Toabatu, 1995 (Riley 1997a,b); **Rae**, 1995 (Riley 1997a,b); **Lobo**, 1995 (Riley 1997a,b); near **Beo**, c.250 m, April 1926 (female in MZB), February 1985 (female in RMNH), 1995 and 1997 (Riley 1997a); north of **Rainis**, October 1990 (Taylor 1992) and common there, August 1998 (I. Mauro *in litt.* 1999); **Pulutan**, 1995 (Riley 1997a,b), and thus within the extensive Karakelang Hunting Reserve (Wardill *et al.* 1997); **Bowoni Baru**, 1995 (Riley 1997a,b); **Tule**, May 1986 (Bishop 1992a); **Melongguane** (“Melambuana” on label), November 1894 (male in AMNH);

Salibabu above **Musi**, three birds, June 1999 (J. Riley *in litt.* 1999); **Sere**, September 1995 (Riley 1997a,b), and by local report every year (Riley 1997a,b; see Migration); Gunung Ayambana at **Lirung**, May 1926 (two females in MZB), September 1995 (Riley 1997a,b) and November 1999 (J. C. Wardill verbally 2000);

Saha (untraced) immigrant roosting birds at no specific locality (Hickson 1889, Salvadori 1891);

Kabaruan no specific locality (Meyer and Wigglesworth 1898);

Sangihe in the eighteenth and nineteenth century (White and Bruce 1986); **Talawid Atas**, September–October 1995, with reports also from around Kedang village (Riley 1997a,b); Gunung Sahendaruman, heard in 1996 but record uncertain and, if true, probably involving escapes (Lambert 1997, F. R. Lambert *in litt.* 1999);

Siau (race *histrio*) unspecified localities, February 1866 (female in RMNH), March 1871 (two specimens in ZMB), May 1874 (Blasius 1888) and June–July 1893 (Meyer and Wigglesworth 1898);

Tagulandang centre of the island around Desa Bawoleu, by reliable local report, until the early 1990s (J. C. Wardill *in litt.* 1999).

Escaped birds were found in the nineteenth century around Menado, Sulawesi (Meyer and Wigglesworth 1898).

POPULATION Overall the population of this species is in the low thousands and declining rapidly.

Karakelang On “Talaud” the species was generally reported as common to abundant by explorers in the nineteenth century (Meyer and Wigglesworth 1898); Hickson (1889) called it “very abundant”. In 1978 the species was “much as it was last century”, i.e. “common near the coast” (White and Bruce 1986), even though in the mid-1980s it was thought to have “suffered tremendously” from an anti-locust (*Sexava*) spraying campaign in the 1970s (F. G. Rozendaal *in litt.* 1987 to T. P. Inskipp). However, it was easily seen in 1986, when local people described it as common (Whitten *et al.* 1987a), and was local in October 1990 (Taylor 1991b, 1992) but reportedly common in the interior (Bishop 1992a). In the early 1990s it was guessed that the Talaud population might only be 2,000 individuals (Nash 1993b). In response to the alarm that this speculation (coupled with the documentation of birds in international trade). Fieldwork in 1996 indicated that the total population on the island lay in the range 9,400–24,160 birds, although many local villagers reported a significant decline in numbers during the previous decade, with an estimated 500–600, possibly 1,000 birds, having been trapped per year (Lambert 1997; see Remarks 3). Subsequent fieldwork in 1995–1997 determined that the distribution of birds was not even, as had been assumed in the calculations for Lambert’s (1997) figures, and suggested instead a total population for the entire species of 5,000–10,000 birds, of which the great majority were on Karakelang (Riley 1997a). Between 1995 and 1997 it appeared that a real decline took place, particularly in central Karakelang (Riley 1997a, Wardill and Riley 1997). The endemic subspecies is still common in forest in the north of the island, with a maximum of 253 birds in one roost (Tuabatu), but in the south it is less common (Riley 1997b); the number of birds in the Tuabatu roost decreased to 54 in 1997 and around 90 in 1999, perhaps reflecting an overall diminution of numbers (J. C. Wardill *in litt.* 1999; see Threats). The population on Talaud—indeed the world population—is ultimately based within the Karakelang Hunting Reserve (Wardill *et al.* 1997).

Salibabu In 1993 islanders on Salibabu reported that the species had been trapped “to the point where it is no longer worth the effort to try and catch further specimens” (Nash 1993b). In one account the species survived in “very small numbers” in the mid-1990s (Riley 1997a) while in another it was reportedly extinct there (Riley 1997b). Recent records (see Distribution) suggest that a tiny remnant population might still persist, although immigration from elsewhere (evidently Talaud) is also reported (see Migration below). In a summary table Riley (1997a) suggested a population of 50–100 birds, but the species is probably almost gone from the island (J. C. Wardill *in litt.* 1999).

Kabaruan In one account the species survived in “very small numbers” in the mid-1990s (Riley 1997a) while others it was reportedly extinct there (Riley 1995, 1997b). In a summary table Riley (1997a) suggested a population of 0–50 birds, but the island appears totally deforested (J. Riley *in litt.* 1999).

Sangihe Platen (1887) said it was by no means common on Sangihe, but that, as a result of the ever-widening extent of coconut plantations, it had retired more and more into the mountainous interior (in Meyer and Wigglesworth 1898). It was also judged “comparatively rare” in relation to numbers on Talaud by Hickson (1889). In 1978 the species was “much as it was last century”, i.e. “uncommon and mainly in the hills” (White and Bruce 1986), but it was not reported subsequently for a decade (e.g. Collar and Andrew 1988) and was feared extinct (Whitten *et al.* 1987a, Taylor 1991b, Bishop 1992b; hence Collar *et al.* 1994), although it had in fact been seen (“very uncommon”) in 1985 (see Nash 1993b) and up to six birds were seen, and 30 reported by local people, in 1995, leading to a presumed population of 30–100 individuals (Riley 1995, 1997a,b). However, semi-structured interviews in November 1999 with local people at Gunung Sahendaruman revealed that the species had been trapped out of the area some 50 years previously, the birds being sold to visiting boats e.g. from the Philippines (J. C. Wardill verbally 1999). The total population on the island in the mid-1990s was probably under 50, including specimens of the escaped race *talautensis* (Lambert 1997), but interviews in southern Sangihe in November 1999 revealed that only people over the age of 60 knew the species, suggesting that perhaps the native population was effectively extinct several decades ago, at least in the south of the island (J. C. Wardill *in litt.* 1999). In 10 months of fieldwork, spanning the period from October 1996 to February 1999, there were no records of the species on Sangihe, and local people at Talawid Atas reported in January 1999 that they thought it had disappeared from the site (and was therefore probably extinct on the island) (J. Riley *in litt.* 1999).

Siau The species was reported for Siau in May 1874, assumed to be a consequence of an introduction (Blasius 1888); five specimens were obtained there in July 1893 (Meyer and Wigglesworth 1898). An old man indicated that the species was common on the island when he was a boy, in the 1920s (J. Riley *in litt.* 1999). Following a visit in August 1998 it can now certainly be declared extinct there (F. R. Lambert *in litt.* 1999), a view also taken in Riley (1997a).

Tagulandang Birds were reportedly common in the centre of the island until around 1980, becoming rarer and disappearing (see Threats) in the early 1990s (J. C. Wardill *in litt.* 1999).

That introductions may occur is borne out not only by the discovery of specimens of *talautensis* on Sangihe (see below) but also by records of the species around Manado on Sulawesi, brought there from Sangihe or, more probably, Talaud (Meyer and Wigglesworth 1898).

ECOLOGY *Habitat* The species inhabits forests, but also visits cultivated areas to feed on coconut nectar (Riley 1997b); indeed all 25 observations by one observer in around 1990 were made in cultivated areas (Taylor 1991b), and when a tiny remnant population of nominate *histris* was found in 1995 it was in an area “dominated by coconut, nutmeg and clove plantations with a high proportion of fruit trees” (Riley 1997a). Birds roost communally, on Karakelang with Philippine Starling *Aplonis panayensis*, in isolated trees (Riley 1997a, Wardill and Riley 1997).

Food The species commonly feeds on nectar in flowering coconuts (Bishop 1992a, Taylor 1992); but it also takes fruits of *Ficus* and flowers of *Elaeocarpus*, *Canarium*, *Lansium domesticum*, *Syzygium*, *Cananga*, *Eugenia*, *Terminalia catappa* and, reportedly, *Albizia vaucalartaria* (Lambert 1997, Riley 1997a,b, Wardill and Riley 1997, J. Riley *in litt.* 1999). Moreover it feeds on the flightless instars of the introduced cricket *Sexava nubila* in coconut palms, scrambling up and down palm leaves in search of them, killing them and sucking out the abdominal fluids (Riley 1997a, Wardill and Riley 1997, J. Riley, J. C. Wardill *in litt.* 1999).

Breeding In one account, breeding was judged to occur twice a year, in April–May (wild birds being seen entering nest holes in February and March) and November–December (Riley 1997a). In another, captive juveniles in late September combined with local information suggest that the species breeds in June–July, but with trappers also reporting activity in November–December, coinciding with the main fruiting period on the islands (Riley 1997b), supporting which was an immature captive found in January (Riley 1997a). The most recent evidence (1999) indicates a main breeding period in March–May, with an adult inside a nest hole for six days in April, a newly fledged bird in April, and two young taken from the nest and unable to fly, April, followed by regular sightings of immature birds throughout May and early June (J. Riley *in litt.* 1999). A juvenile was collected in July (Blasius 1888), and one of the birds collected in July 1893 on Siau was immature, passing into adult plumage (Meyer and Wiglesworth 1898). One reported nest (unoccupied when visited) was 30 m (20 m in Riley 1997a) up in a hole in the main trunk of a *Canarium* tree (Riley 1997b); another, apparently not visited, was 25 m up in the main trunk of a tall tree, probably *Albizia* (Riley 1997a).

Migration According to local people, a flock of c.100 birds immigrates into the Gunung Ayambana area on Salibabu between November and March each year (Riley 1997b). Hickson (1889) noted that a flock of “many hundreds” flew from Salibabu to the Saha islands off the coast to roost.

THREATS The Red-and-blue Lory is one of (now) seven threatened members of the suite of (now) 10 bird species that are entirely restricted to the “Sangihe and Talaud Endemic Bird Area” (see Remarks 6 under Caerulean Paradise-flycatcher *Eutrichomyias rowleyi*), threats and conservation measures in which are profiled by Sujatnika *et al.* (1995) and Stattersfield *et al.* (1998). Habitat loss in the past and trade pressure in the present are the key threats to this species; any more of either would be highly detrimental.

Habitat loss The species is (or was) highly vulnerable to any further degradation of the tiny amount of primary forest remaining on Sangihe (Riley 1997b; see Threats under Sangihe Shrike-thrush *Colluricincla sanghirensis*). On Talaud, despite the relatively extensive forest cover, availability of nest holes may be limiting, and selective logging of larger trees and increased overall deforestation will exacerbate the situation (Riley 1997a). Moreover, in 1996 logging within production forest in north-west Karakelang commenced, was observed to have an immediate impact on birds in the Essang district, and was predicted to have further effects elsewhere (Riley 1997a); by 1999 some 800 ha had been logged, and another two blocks of 500 ha were scheduled for logging (J. C. Wardill *in litt.* 1999). The adjacent Karakelang Hunting Reserve is threatened with clearance for agriculture, small-scale local logging, unsustainable levels of hunting and commercial mineral and timber extraction, although mainly at low levels at present (Wardill *et al.* 1997); a logging company removed trees from 50 ha of the reserve in 1998 and was not prosecuted (J. C. Wardill *in litt.* 1999). On Kabaruan there appears to be no native forest remaining (J. Riley, J. C. Wardill *in litt.* 1999). On Tagulandang the recent extinction of the species is attributable to overall loss of forest (owing to boat-building)—with only c.5 ha of disturbed habitat on the highest peak—and in particular to lack of nest holes and food trees combined with reported shooting and trapping (J. C. Wardill *in litt.* 1999).

Trade The species was already known to be widely trapped and traded in the last century (Blasius 1888). Specimens were taken to Sulawesi, Halmahera, Ternate, and were also seen in captivity on Cebu in the Philippines (Meyer and Wiglesworth 1898). In the 1980s it was noted to be widely kept captive on Karakelang (Bishop 1992a), but between April and December 1992 as many as 500 birds arrived in Singapore, at least 66 of which were re-exported to South Africa where they went on sale at a price of US\$2,600 (presumably per pair) (Nash 1993b). In 1992–1993 an external order for 3,500 birds was placed and fulfilled, creating in its wake a new cadre of active trappers on Talaud and thus resulting in greatly increased trapping intensity (Riley 1997a; also F. R. Lambert *in litt.* 1999); trapping techniques, seasons and infrastructure are described in Riley (1995). During 1996 over 100 captive birds, all reported as caught locally, were recorded on Karakelang, particularly in Tuabatu, and it was estimated that trapping accounted for 500–600 (and possibly as many as 1,000) birds per year (Lambert 1997). Enquiries in 1995 and 1997 at two villages, Bengel and Tuabatu, suggested that c.300 birds were caught each year at each village, the birds being sold either to traders in Beo (and then transported to Manado, Sulawesi) or to Filipino traders who come each year to the island to buy the birds, these latter transactions being illegal under CITES (Riley 1997a,b). It was trade that appeared to be responsible for the increasing restriction of the species to the northern part of Karakelang (Riley 1997b), and for the population crash in the southern part (Riley 1997a). In 1999 further research suggested that as many as 1,000–2,000 birds were still leaving Karakelang each year, 80% to the Philippines (J. C. Wardill *in litt.* 1999). Trapping on Sangihe with glue and sticks was widespread until at least the 1940s, and probably was instrumental in preventing any recovery after the disease outbreak on 1965 (see below) (J. C. Wardill *in litt.* 1999).

An additional problem caused by trade is the escape of subspecies *talautensis* on Sangihe, thereby posing a threat to nominate *histrion*'s genetic and phenetic integrity (Riley 1997b). However, this concern no longer seems relevant (see Population).

Disease The problem of disease transmission from escaped cagebirds to wild populations has been identified as a further potential hazard to the species (Lambert 1997, Riley 1997a): Chattering Lorries *Lorius garrulus* and three species of cockatoo are now regularly seen flying around on Sangihe as a result of accidental or deliberate releases (F. R. Lambert *in litt.* 1999). In fact, interviews on Karakelang revealed that in 1965 the species suffered a devastating disease—apparently only Newcastle Disease, probably transmitted from domestic fowl to wild lorries via escaped lorries, fits the symptoms and circumstances—such that birds (some reports referring to worms around the cloaca) would fall out of trees when the trunk was shaken, and would die a few days later; the island's population never fully recovered, but this may have been related to the anti-locust spraying in the early 1970s (Lambert 1997, J. C. Wardill *in litt.* 1999, verbally 2000; see Population: Karakelang).

Biocides Anti-locust (*Sexava*) spraying in the early 1970s may have killed birds or suppressed their reproductive capability or both (see immediately above). The current (at least occasional) use of technically illegal insecticides (azodrin and other “monokrotofos” pest-control chemicals) to eliminate *Sexava* from coconut plantations reportedly causes deaths in lorries a few days after application (J. Riley *in litt.* 1999).

MEASURES TAKEN The species was moved from Appendix II to Appendix I of CITES in November 1993 (Lambert 1997). In January 1999 it was placed on the list of protected Indonesian species (M. Indrawan *in litt.* 1999). On Talaud some 35,779 ha of forested land is supposed to have some form of protected status (Riley 1997a), most importantly the 21,800 ha Karakelang Hunting Reserve (Wardill *et al.* 1997). Investigations by TRAFFIC Southeast Asia in 1992–1993 (Nash 1993b) helped highlight the plight of the species and indicated the need for intervention, prompting the IUCN status review (Lambert 1997) and the independent Action Sampiri project (e.g. Wardill and Riley 1997). Action Sampiri has been conducting an

awareness and pride-building campaign, relating to the fact that Talaud is the last stronghold of the species, since 1997 (J. C. Wardill *in litt.* 1999). Information on the major Action Sampiri initiative on Sangihe is given in the equivalent section under Caerulean Paradise-flycatcher.

MEASURES PROPOSED It is now almost certain that the only viable population of this parrot survives on Karakelang, and this is where conservation efforts must now be focused. In the mid-1990s it was realised that a major (minimum) target for the Red-and-blue Lory must be the reduction of trapping on Karakelang to a sustainable level, and that this could be done by awareness campaigning and by improved protection for key habitats and sites (five pages of proposals in Riley 1997a, three in Lambert 1997); this agenda is currently being worked through (J. C. Wardill *in litt.* 1999). In the light of the evidence that a high volume of birds are traded out via fishing boats to the Philippines, strict dockside control in ports in Talaud, and at General Santos on Mindanao, are now necessary (J. C. Wardill *in litt.* 1999). With regard to the key site for the species, Karakelang Hunting Reserve, the needs now are for further research, training and resources for local PHPA officers, increased local awareness of the reserve and its boundaries, an upgrade of its status to wildlife sanctuary, and a cross-community management plan (Wardill *et al.* 1997, J. C. Wardill *in litt.* 1999).

Concerning Sangihe, information on general and site-specific recommendations by BirdLife International and Action Sampiri is given in the equivalent section under Caerulean Paradise-flycatcher (although this may be too late for the Red-and-blue Lory).

REMARKS (1) Although considered clearly distinct (Hartert 1898b), the race *talautensis* is considered very hard to distinguish in the field (Lambert 1997). Meanwhile the provenance of the type material of the supposedly more distinct (Forshaw 1989) race *challengeri* is uncertain (White and Bruce 1986), although the labels clearly state “Nenus Islands” (BMNH label data), i.e. the small group to the north of Talaud. Apart from the small islands of Garat (see Measures Proposed under Grey Imperial-pigeon *Ducula pickerlingii*) and Magupu, the Nenusas are reportedly deforested (Lambert 1997, Riley 1997a), and no lorries were observed by a visiting official to the main island, Miangas, in 1995, or indeed on Garat during a several-day visit in the late 1990s (Lambert 1997), although Riley *et al.* (1998b) indicated that in any case “Miangas” is a group of islands separate from the Nenusas; local residents of the Nenusas denied all knowledge of them there (Riley 1997a). In view of the fact that some captive birds on Talaud, described as caught locally, showed the characters of *challengeri* (Nash 1993b, Lambert 1997), it seems inappropriate to continue to recognise *challengeri*, and indeed it is perfectly possible that the species might occasionally or regularly disperse from Karakelang to the Nenusas, whose nearest island is only about an hour’s flying time away (Lambert 1997). The view that *challengeri* may be based on immature *talautensis* was independently reached by Riley (1997a), Wardill and Riley (1997) and Riley *et al.* (1998b), who however thought that any birds from Kakarutan, to which the ship Challenger was closest when it received the live type series of *challengeri*, would themselves have been taken there from Karakelang. (2) Meyer and Wigglesworth (1898) referred to a specimen from Tagulandang, which from context appeared to be a site on Sangihe but which is in fact an island south of Siau. Moreover, White and Bruce (1986) listed Ruang (a tiny island, also written Riung, off Tagulandang) without comment, and without mentioning Tagulandang itself. Whatever the circumstances, Riley (1997a) listed the species as extinct on both Tagulandang and Siau, on the basis of personal surveys on both islands, although he met an old man on Siau who indicated that the species was common on the island when he was a boy, in the 1920s (J. Riley *in litt.* 1999). Moreover Tagulandang proved by interviews in 1998 to have held a population until relatively recently (see Distribution, Population). (3) Subsequent interviews with villagers suggested that as many as 1,200 birds (Riley 1997a) or 1,300 (Wardill *et al.* 1997) had been captured in 1996.