CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Transfer of *Cacatua sulphurea* from Appendix II to Appendix I, in accordance with Resolution Conf. 9.24 (Rev. CoP12), Annex 1, paragraphs A. i) and ii); B. i), iii) and iv); and C.

B. Proponent

Indonesia.

C. Supporting statement

1. Taxonomy

1.1 Class: Aves

1.2 Order: Psittaciformes

1.3 Family: Psittacidae

1.4 Genus: *Cacatua*

Species: *Cacatua sulphurea* (Gmelin, 1788)

Subspecies: *Cacatua sulphurea sulphurea* (Gmelin, 1788)
Cacatua sulphurea citrinocristata (Fraser, 1844)
Cacatua sulphurea parvula (Bonaparte, 1850)
Cacatua sulphurea abbotti (Oberholser, 1917)

1.5 Scientific synonyms:

1.6 Common names:

English:	Yellow-crested cockatoo, Lesser Sulphur-crested cockatoo
French:	Cacatoès soufré
Spanish:	Cacatúa sulfúrea
German:	Gelbwangenkakadu
Indonesian:	Kakatua-kecil jambul-kuning

1.7 Code numbers: A-218.002.001.011

2. Biological parameters

2.1 Distribution

Range States: Indonesia and Timor Leste (Non-Party).

The Yellow-crested or Lesser Sulphur-crested cockatoo is a virtual endemic to “Wallacea” in the central archipelagos of Indonesia, and on Timor Leste (known formerly as East Timor), occurring in four races, including the remarkably large and nearly extinct *C. s. abbotti*. In addition there are feral populations in Singapore and Hong Kong (Long 1981, Lever 1987). Only in the wetter parts of north and central Sulawesi does it appear to have been naturally absent.

There are four known subspecies. The *C. s. sulphurea* was formerly widely distributed in Sulawesi, however since the early 1980s it has become very rare (it may be locally extinct through much of its range) because of high rates of capture. *C. s. parvula* inhabits most of the Lesser Sunda Islands as Penida, Lombok, Sumbawa, Moyo, Komodo, Flores, Pantar, Alor, Timor, and Semau. *C. s. abbotti* occurs only on Masakambing, one of the Masalembo Islands in the Sulawesi Strait, this subspecies is already extinct on Masalembo. *C. s. citrinocristata* is

endemic to Sumba island. In Timor Leste, *C. s. parvula* were recorded in six locations (Tilomar, Fatumasin, Sungai Clere, Lore, Monte Paitchau – Iralalora, Mount Diatuto) out of nine East Timor Important Bird Areas (IBAs), selected based on site specific information on bird species of conservation significance (Trainor, 2002).

2.2 Habitat availability

This is a bird which inhabits primary and tall secondary lowland and hill forest and forest edge, scrub and agriculture (in Sulawesi), moist deciduous monsoon forest and gallery forest (in Nusa Tenggara), and adjacent areas of lightly wooded scrub and cultivation, mainly in the lowlands to 1,200 m (Pfeffer 1958, Watling 1983b, Butchart *et al.* 1996, Coates and Bishop 1997). The species eats many cultivated foods, so a high proportion of records (where any records exist) are from the neighbourhood of settlements (C. Trainor, 2000 in litt.).

On Sumba, where the importance of tall trees (only on ridgetops and in valley bottoms) to the species was noted in 1978 (Kendall 1979), the species is heavily dependent on closed-canopy (primary) forest at low altitudes (mainly in valley bottoms), although it frequently visits out into open country (M. J. Jones *et al.* 1995). The degree of dependence on forest shown by this species is still unclear: despite its association with closed-canopy forest on Sumba (Jones *et al.* 1995, O'Brien *et al*. 1997). The case of Masakambing (Masalembo islands), where all original habitat except the mangroves has been cleared, indicates that substantial modification of landscape can still be tolerated by the species.

In Komodo National Park the birds were found in dry coastal monsoon woodland and thorn scrub (Bishop 1992a, Butchart *et al.* 1996), but they commonly also use mangroves (M. F. Kinnaird *in litt*. 1999).

On Sumbawa the birds were seen in semi-evergreen forest and roosting in tall riverine forest dominated by *Duabanga moluccensis*; on adjacent Moyo island it was present in "rainforest and gardens" (Johnstone *et al.* 1996; also Butchart *et al.* 1996).

On Flores it penetrates into cultivated land and has been recorded in remote savanna at Wae Wuul (Sudaryanto, 1997 in litt.), but it is dependent for breeding on tiny fragments of lowland forest (tall buttressed *Canarium* and *Ficus* trees) growing around small springs (C. Trainor *in litt*. 1999).

On Sumba the birds are absent or rare in forest area of less than 10 km^2, and they prefer undisturbed primary forests characterised by large trees offering nest sites (Kinnaird 1999).

2.3 Population status

C. s. abbotti: In 1999, only five (5) individual of the Yellow-crested Cockatoo remained on Masakambing island (Setiawan *et al*. 2001).

C. s. sulphurea: In Rawa Aopa Watumohai National Park Yellow-crested Cockatoo was only recorded in the southern area of the park near Laea-Hukaea and estuaries of the Laea, Pampaeae and Mempaho rivers dominated by lowland forest, mangroves and agricultural land. The total population size of Rawa Aopa Watumohai National Park is estimated to be about 100 individuals, and this is probably the most important population on the mainland Sulawesi (Agista *et al*. 2001).

On Pasoso island, however, the total population is estimated only 7-15 individuals (the biggest group recently observed was 7 individuals) with these mostly distributed in the south and central parts of the island in mixed secondary forest, scrub and dryland agricultural plots (Agista *et al*. 2001).

C. s. citrinocristata: Studies from 1989 to 1992 (Marsden 1995) estimated the total population of Yellow-crested Cockatoo was between 1,150 – 2,644 birds. BirdLife Indonesia's survey (2002) resulted in an estimate of the total population of 229 – 1,195 birds outside the National Parks in Sumba (Persulessy *et al*. 2003).

In 2002 Wildlife Conservation Society (WCS) conducted survey, which estimated the population density of 4,3 birds/km^2 in four forest blocks in two national parks in Sumba. (Kinnaird 2003).

C. s. parvula: Like in the islands of Nusa Tenggara (part of lesser Sunda islands), the Yellow-crested Cockatoo on Flores has declined dramatically. Until 1997, cockatoo was found only limited on few sites in small population. In the past 10 years, population of more than ten cockatoo have been found only on two locations. In 1997, 14 individuals was recorded in Ria and in 1998 it was recorded a flock of 15 individuals at Watubuku forest (part of Lewotobi area) (Setiawan *et al*. 2000).

On one field survey, it was encountered 80 individuals on Alor Island, 29 individuals in Pantar Island, and 18 individuals in West Timor. Population estimate was 678-784 individuals in Alor Island and 444-534 individuals in Pantar Island. The survey in Moyo Island recorded 10 individuals and the abundance was estimated at 0,0278 individuals/km^2 in the sampling area (Setiawan *et al*. 2000).

In Komodo National Park the Yellow-crested Cockatoo is still relatively common, being most frequently recorded in dry tropical forest (at sea level to 350 m) dominated by *Tamarindus indicus* and *Sterculia foetida* (Agista & Rubyanto 2001).

Total population size for Komodo National Park is estimated to be 600 individuals with 500 on Komodo island and about 100 individuals on Rinca iskand. The population in Komodo National Park is believed to be the largest for the sub species *parvula* (Agista & Rubyanto 2001).

Survey in 1999 in Sumbawa it was found a new nest and three cockatoos in the Sejorong area (operational mining site of PT Newmont Nusa Tenggara). In total, 7 nests and 13-15 cockatoos were found in the Batu Hijau area.

Population size for Timor-Leste is crudely estimated at 500-1,000 individuals (Trainor *et al*. *in litt* 2004).

2.4 Population trends

The Yellow-crested Cockatoo has suffered (and may continue to suffer) an extremely rapid population decline, probably equivalent to more than 80% over three generations (given its longevity) (BirdLife International 2001).

C. s. abbotti was "easily found" until 1980s, but they have been now apparently disappearing from Masalembo islands. Only 8-10 birds could be found on Masakambing island in early 1994 (Cahyadin *et al*. 1994a), and the latest survey by BirdLife and Kutilang IBC in 1999 found only five (5) individuals remaining on the island (Setiawan *et al*. 2001).

The population of *C. s. citrinocristata* in Sumba Island is also facing the same decline from 1980s until today. Based on up-to-date BirdLife Indonesia's survey and data in 2003, the estimation population of *C. s. citrinocristata* in three different forest habitat types (ouside national parks areas) in Sumba Island is 1-2 birds/1000 ha.

At many other sites in Sulawesi where *C. s. sulphurea* was once recorded, it has now disappeared. All the modern evidence, amassed in compilations and fieldwork by Andrew & Holmes (1990), Marsden (1993), Cahyadin *et al*. (1994), and Mallo & Setiawan (1996), suggests that a very steep decline in population throughout the island has occurred in the past 20 years (PHKA/LIPI/BirdLife International-IP 1998).

Flores suffers massive declines in *C. s. parvula* population. The sub-species was "very common all over the island" in the early 1980's, but from the latest survey it was recorded only 15 individuals at Watubuku forest (PHKA/LIPI/BirdLife International-IP 1998, Setiawan *et al*. 2000). The representative populations of this sub species still occur in Alor, Pantar and Komodo Islands. West Timor and other small islands in Nusa Tenggara can only support few individuals (PHKA/LIPI/BirdLife International-IP 1998, Setiawan *et al*. 2000, Agista & Rubyanto 2001).

2.5 Geographic trends

C. sulphurea is endemic to Indonesia and Timor Leste. All sub species remain in very small populations, some of them are even nearly extinct. *C. s. sulphurea* and *C. s. parvula* are survive in very small and isolated populations, and they are regarded as having low viability in the long term (PHKA/LIPI/BirdLife International-IP 1998). Significant population *of C. s. sulphurea* only exist in Rawa Aopa Watumohai National Park and Pasoso Island, and probably already extinct in north Sulawesi (Agista *et al*. 2001, BirdLife International 2001). *C. s. parvula* is nearly extinct in Sumbawa (Butchart *et al*. 1996, Johnstone *et al*. 1996, BirdLife International 2001) and is probably now extinct in Lombok (Darjono *in litt*. 2004) with the only viable population in Komodo National Park, Alor Island, Pantar Island and Timor Leste (Agista & Rubyanto 2001, Setiawan *et al*. 2000, Trainor *et al*. 2004). *C. s. abbotti* is considered to be nearly extinct (Setiawan *et al*. 2001). *C. s. citrinocristata* has a small and declining and highly threatened but the species is probably viable population in Sumba Island (PHKA/LIPI/BirdLife International-IP 1998, Persulessy *et al*. 2003).

2.6 Role of the species in its ecosystem

The role of the Yellow-crested Cockatoo in its ecosystem is insufficiently known. However, this species feeds on seeds, nuts, berries and fruits (Forshaw 1989, Setiawan 1996) and might probably play a role in the distribution of plants.

Furthermore, it is part of the food chain. For example, the Komodo dragon (*Varanus komodoensis*) preys upon eggs and uses nests of the Yellow-crested Cockatoo during their arboreal phase. There is a competition between the dragon and cockatoo in using *Sterculia foetida* for nesting (Agista & Rubyanto 2001). Birds of prey might also attack young and adult Yellow-crested Cockatoo. There are two species, Spotted kestrel (*Falco moluccensis*) and White-bellied Sea-eagle (*Haliaeetus leucogaster*) have observed by Behrens (1995) and Agista & Rubyanto (2001) to attack the cockatoo.

2.7 Threats

The biological status of *C. sulphurea* is critically endangered: A 1cd + 2cd (UNEP – WCMC, 2001, BirdLife International 2001).

Although there can be no doubt that habitat loss must have contributed substantially to the overall decline in the species population, the blame for the precipitous drop in numbers in the past quarter of the 20th century lies entirely with unsustainable exploitation for trade whether domestic or international. Internal trade to Java had had a local effect as early as 1925, and the international demand has created sophisticated trapping leading to massive decline on the population.

The sub species *C. s. citrinocristata* can only be found in the remaining forest blocks on Sumba Island, and the decrease of its population is due to habitat loss and trapping for trading (Persulessy *et al*. 2003).

Threats at Pasoso island remain unclear however there was an indication of local bird trapping including cockatoos (but requiring confirmation) (Agista *et al*. 2001).

The sub species *C. s. parvula* in Flores, Alor, Pantar, Timor and Moyo islands was found in moist-deciduous monsoon forest. This type of habitat is under severe pressure because of illegal timber cutting and forest fire. The main factor of population decline is illegal trade in 1980's. Another major factor is loss of forest area (Setiawan *et al*. 2000).

3. Utilization and trade

3.1 National utilization

Cacatua sulphurea has been kept as pet on many Indonesian islands like Masakambing (Cahyadin *et al*. 1994a), Sulawesi (Cahyadin *et al*. 1994b), Nusa Penida (Setiawan 1996) or

Buton (PHPA/LIPI/BirdLife International-IP 1998). In 1996 the species was readily available in markets at Kesali (Catterall in PHPA/LIPI/BirdLife International-IP, 1998). Despite the legal national status, this species is still offered at bird markets in Jakarta and Surabaya with more than 25 individuals every month (BirdLife Indonesia, 2001). The species has been treated as pet for long time in Europe and the United States of America.

3.2 Legal international trade

For many years *Cacatua sulphurea* was traded in large numbers for international pet market. Export data are available since 1981. Subspecies were not distinguished. From 1981 to 1989 export numbers from Indonesia increased dramatically with a total of 61,774 birds exported from Indonesia during that period. After import restrictions for the species in 1989 by the European Union and an import ban in 1992 by the USA, export numbers from Indonesia decreased steadily to zero in 1994, with single birds exported thereafter in 1995, 1997 and 1999 (WCMC 2001, 2002).

Since 1992 there have been an increasing trade of captive bred individuals (Table1). The Philippines, Singapore, South Africa and Indonesia are the main states exporting captive bred specimens of *Cacatua sulphurea.* Especially for Indonesia and Singapore there was a sudden turn up of captive bred specimens since 1994, the time the legal trade in wild-taken specimens stopped.

Since few years ago Indonesia has exported captive bred specimens. Captive breeding operation on *Cacatua sulphurea* in Indonesia is running by two companies namely PT. Bali Exotica Fauna and PT. Anak Burung Tropikana. Both of these companies were located in Bali Province. Since the year 2002 PT. Bali Exotica Fauna was not running their business and since the year 2003 this company was taken over by PT. Anak Burung Tropikana.

3.3 Illegal trade

Illegal trade is a major threat to *Cacatua sulphurea*. On Buton island *C. s. sulphurea* is under great pressure from illegal trapping. Birds are readily available in markets at Kendari (capital city of the province of South-east Sulawesi), and locally trapped birds can be seen throughout Buton island (Catterell in PHPA/LIPI/BirdLife International-IP 1998). On Komodo National Park trapping occured in remote areas of the National park (Butchart *et al*. 1996).

On Sumba illegal trade in *C. s. citrinocristata* is continuing (Jones *et al*. 1995, Persulessy *et al*. 2003, R. Pati verbally 2004). Furthermore, in 1999 the species was still offered in two of Jakarta's bird markets (Indrawan in BirdLife International 2001). In 2000, in Java and Bali 127 birds were found in bird markets in which 49 birds were from Sumba. Field data from an investigation team of NGOs showed that in June 2002 one collector in Waikabubak exported 52 Yellow-crested Cockatoos to other islands (Persulessy *et al*. 2003). In June 2003, 52 individual birds were shipped from Sumba (based on BirdLife Indonesia investigation data). One from 10 wildlife traders on Sumba has been sent to the first ever prison (6 months in jail and heavy fine) in 2003.

Since 1992 illegal birds were confiscated, summing up to 70 birds (WCMC 2001). There is a strong possibility that wild caught Yellow-crested cockatoos are illegally transferred from Indonesia to other countries in Southeast Asia, e.g. Singapore, and then traded legally (PHPA/LIPI/BirdLife International-IP 1998). Evidently, more than 1,000 birds were smuggled on this way after 1993 (BirdLife International 2001).

During 2001-2003, there were 100-300 birds still found in bird markets in Java and Bali. The Yellow-crested Cockatoo still smuggled to Singapore through Batam Island. In 2002, 8 *Cacatua sulphurea* which was known to be not captive bred birds, found in pet shop in Singapore. In 2003, there were 10 non captive bred birds found in pet shop in Singapore (based on ProFauna, an East-Javan-based NGO's investigation data).

3.4 Actual or potential trade impacts

Unsustainable harvesting in the last decades is believed to be the main reason for the drastic decline of the species (Cahyadin *et al*. 1994a; Cahyadin *et al*. 1994b; Butchart *et al*. 1996; Jepson *et al*. 1996; Setiawan 1996). Efficient trapping methods in combination with the flocking behaviour of the species resulted in capture of whole groups at one location (Cahyadin *et al*. 1994b). This has led to the cumulative local extinctions.

Capture of adult birds is still going on (see above, e.g. the species is readily available at the bird markets) and diminishes the number of potentially reproductive individuals. Furthermore, collection of nestlings leads to a low recruitment rate and an increasingly geriatric population (Jones *et al*. 1995).

Suitable nest trees (old, large trees) is one limiting factor for reproduction in *C. sulphurea* (Marsden & Jones, 1997) and very sought after by local people for building (PHPA/LIPI/BirdLife International-IP 1998). However, due to the very low population numbers at each location, any further harvesting is a major threat to the species.

3.5 Captive breeding or artificial propagation for commercial purposes (outside country of origin)

There are only few data available about breeding for commercial purposes. Most of the captive bred birds are presumably sold in the domestic market. The World Conservation Monitoring Centre has provided data about international trade with captive bred (second generation) birds (WCMC 2001, 2002). Between 1981 and 1989, 72 captive bred birds were traded. Thereafter, increasing numbers occurred in trade with a maximum in 1999 (the last year with complete records) of 427 birds (Table 1).

Table 1: Reported numbers of commercial import and export of captive bred birds from the four main countries of trade (WCMC 2001, 2002)

	Reported export of captive bred birds									
Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Indonesia	-	-	-	-	-	-	-	-	63	47
Philippines	-	58	50	65	104	-	90	58	-	80
Singapore	45	-	-	-	2	5	43	67	88	103
South Africa	-	10	23	23	6	-	2	12	170	156
	Reported import of captive bred birds (from the countries listed)									
Indonesia	45	-	-	-	-	-	-	-	72	43
Philippines	6	50	52	75	87	67	174	54	42	37
Singapore	-	59	50	-	2	5	35	54	82	63
South Africa	-	-	38	1	2	-	-	8	105	84

The commercial breeding centre, Birds International, in the Philippines produced 351 youngs between 1996 and 2001 (Bundesamt für Naturschutz, 2002). Number of youngs produced during that period increased in *C. s. sulphurea* (13-33 youngs/year), remained constant in *C. s. citrinocristata* (31-38 youngs/year), but decreased steadily in *C. s. abbotti* (20 youngs in 1996 and 8 youngs in 2001). They did not breed the subspecies *C. s. parvula*.

In Singapore at least two commercial breeding centres are known: the Singapore Avi Research of Patrick Tay and the Avifauna Breeding and Research of Dr. Quek Beng Tee (Schmidt 2001). Seven pairs (five of them are breeding) of *C. s. sulphurea* are kept at the Singapore Avi Research.

Many Yellow-crested cockatoos are in private collections. Breeding records are available from the Society of Species Conservation and Aviculture (AZ), the largest society for private breeders in Germany. During 1994 to 1999 around 10 to 15 breeding pairs were recorded in *C. s. citrinocristata* and *C. s. sulphurea,* which produced 9 to 26 and 10 to 29 young, respectively each year. Altogether, 99 young of Citron-crested cockatoos and 102 of *C. s. sulphurea* were registered. In the other two subspecies, *C. s. abbotti* and *C. s. parvula,* only one to two breeding pairs reproduced one to five youngs. Overall, during that period 6 youngs of *C. s. abbotti* and 6 of *C. s. parvula* were registered. It is not known how many of these and further birds are sold commercially.

There are also attempts to breed birds for conservation purposes. In 1993 a survey to determine the population status of *C. s. citrinocristata* in captivity was carried out in Germany followed by a foundation of a breeding programme (Bürkle, 1993). The founder population consisted of 71 birds with six regularly breeding pairs (Bürkle, 1994a). In 1994 *C. s. citrinocristata* was included in the European Endangered Species Programme (EEP) of the European Association of Zoos and Aquaria (EAZA) (Wilkinson 2000). Since 1994 both programmes are joined (Bürkle 1994b). The last available report (EEP Yearbook 1998/1999) indicated a total of 42 birds in 14 collections with 5 young bred in 1998 (Wilkinson pers.). In North America *C. s. citrinocristata* is recommended for inclusion in the Population Management Plan (PMP) and the Species Survival Plan (SSP) of the American Zoo and Aquarium Association (AZA) (Wilkinson 2000).

4. Conservation and management

4.1 Legal status

4.1.1 National

Until 1997 *C. sulphurea* was unprotected in Indonesia. However, since 1994 catch quotas were set to zero. There were several local decrees. For *C. s. parvula* hunting of all birds has been prohibited on Lombok and Sumbawa since 1994 (instruction No. 20, 1994 of the Governor of Nusa Tenggara Barat) and similarly on Sumba, Flores and Timor (instruction No. 15, 1994 of the Governor of Nusa Tenggara Timur). On West and East Sumba, collection and transport of cockatoos has been banned since 1992 and 1993 (Decree No. 147, 1992 and No. 21, 1993 of the Mayor of the Regency of this island). *C. s. abbotti* has been protected since 1995 by Decree No. 5, 1995 (Regency of Sumenep, East Java) (PHPA/LIPI/BirdLife International-IP 1997). In 1997 *C. s. citrinocristata* was declared as a protected species by Ministerial Decree (Decree of the Minister of Forestry No. 350/Kpts-II/1997: 9 July 1997). Since 1999 all sub-species of *C. sulphurea* is fully protected in Indonesia in accordance with the Government Regulation No. 8 of 1999 (Anon 1999, BirdLife International 2001).

4.1.2 International

In 1981 *C. sulphurea* was listed in CITES Appendix II. There has been an EU import suspension for the Yellow-crested cockatoo since 14 December 1989 (import suspension art. 10.1.(b) under old regulation EC Reg. 3626/82, now under EC Reg. 338/97). In 1997 the species was included in Annex B of the EU Wildlife Trade Regulation.

The US Wild Bird Conservation Act of 1992 bans all CITES Appendix II species, including *C. sulphurea,* unless the Secretary of the Interior is satisfied that a scientifically-based management plan exists for the species (PHPA/LIPI/BirdLife International-IP 1998).

4.2 Species management

4.2.1 Population monitoring

C. s. abbotti: Status assessments of the Yellow-crested Cockatoo were conducted on the islands of Masalembo and Nusa Penida twice-yearly from 1994-1999. On the Masalembo islands group, the Yellow-crested Cockatoo only exists on the island of

Masakambing. On the Nusa Penida Island this species exists only in the Dusun (village) Sedihing and Dusun Karang areas (Setiawan et al. 2001).

BirdLife also supported Kutilang-IBC, Yogyakarta -based NGO and local people to undertake population monitoring and research of *Cacatua sulphurea abbotti* in Masakambing Island. Local people in Masakambing have become involved in monitoring and guarding the cockatoos and its nests.

On Masakambing four artificial nesting boxes were placed in trees (*Ceiba petandra* and *Avicennia*) to increase availability of nesting sites, however none were used by Yellow-crested Cockatoos during the period of study. This may be due to inadequate size or incorrect positioning of the nest boxes (Setiawan *et al*. 2001).

C. s. sulphurea: A PHKA/BirdLife and Yayasan Cinta Alam (YASCITA) Kendari team undertook survey in Rawa Aopa Watumohai National Park in 2000. In 1999 BirdLife and Yayasan Bubalus Quarlessi Depressicornis (BQD) Palu conducted survey at Pasoso island to assess population status, distribution and habitat use (Agista *et al*. 2001).

C. s. citrinocristata: BirdLife Indonesia continues to work on Yellow-crested Cockatoo in Sumba. During 2000-2004 BirdLife took actions for the conservation of Yellow-crested Cockatoo in two phases. The first phase was for survey and data collection in order to determine the current population status and distribution of Yellow-crested Cockatoo in the wild. A strategy for controlling the trapping and trading and strengthening conservation action has also been developed. The second phase was focused on the implementation of the conservation in the form of advocacy, awareness and law enforcement (Persulessy *et al*. 2003). Fourteen survey locations were selected.

C. s. parvula: A monitoring survey of this cockatoo conducted in Nusa Penida found that the population had declined further at this site. The survey was possible by collaboration between BirdLife and KPB Kokokan (Udayana University, Bali) (Setiawan *et al*. 2001).

The cockatoo survey in Flores was undertaken as a part of Nusa Tenggara Biodiversity Survey, by BirdLife and WWF Nusa Tenggara team. The survey in Alor, Pantar and Timor Barat (West Timor) was conducted on October-November 1998 and Moyo island on November-December 1999 (Setiawan *et al*. 2000).

A Komodo National Park and BirdLife team undertook survey in Komodo National Park in 2000 to assess population status, distribution and habitat use (Agista & Rubyanto 2001).

A monitoring survey of the cockatoo was organised in 1998 at the Newmont mine-site at Batu Hijau. The survey found that the population had decline further at this site.

4.2.2 Habitat conservation

Indonesia has established protected areas important for protection of the species. These include: Rawa Aopa Watumohai National Park (105.194 ha); Pulau Pasoso (49-200 ha, depend sea water tide), Marine Wildlife Sanctuary; Komodo National Park (1.817 km2), off the west coast of Flores, which is also a World Heritage Site.

In 1998 following a recommendation by BirdLife Indonesia, the Indonesian Government represented by Ministry of Forestry created 2 (two) National Parks on Sumba, Manupeu-Tanadaru and Laiwangi-Wanggameti. Besides the two national parks, other forest areas on Sumba need also attention because they have the potential to support Yellow-crested Cockatoos (Persulessy *et al*. 2003).

The Tatar Sepang area has been proposed as a 40,000 ha Natural Forest Reserve (either Wildlife Sanctuary or Nature Reserve) located in south-west Sumbawa in Nusa Tenggara Barat (Sumbawa District). An important population of cockatoos along the Sejorong River has almost disappeared during the mine construction phase but the nest trees have

been protected. Conserving cockatoo populations in adjacent areas will aid re-population of the cockatoo sanctuary in the Sejorong valley.

4.2.3 Management measures

The results of various surveys have led to the development of a species recovery plan in 1997 (PHPA/LIPI/Birdlife International-IP 1998). This plan was further updated in the following year (PHPA/LIPI/Birdlife International-IP 1998). The aims was and still is to reduce poaching of wild birds, enforce the law, distribute awareness programmes, and to provide alternative sources of Lesser Yellow-crested cockatoos through captive breeding.

Protection of areas as mentioned under 4.2.2. are partly established on recommendation of the surveys (Jepson *et al*. 1996). Local and national decrees to prohibit collection and trade of the Yellow-crested cockatoo are a consequence of the alarming low population numbers found during the surveys (Cahyadin *et al* 1994b).

4.3 Control measures

4.3.1 International trade

The species is included in CITES Appendix-II so that international trade in the specimens of the species is strictly regulated. Additional international import restrictions by European Union and the USA seem to be effective to reduce the unsustainable trade. However, it is reported that Singapore continued to re-export wild-caught birds originating from Indonesia after the export suspension of Indonesia in 1994, although in decreasing numbers and probably sourced from the Singapore's previous years imports. In total, 1229 wild-caught birds were reported to be re-exported from Singapore in 1994 to 1999 (WCMC, 2001).

4.3.2 Domestic measures

The species is totally protected in Indonesia, meaning that no capture, possession or trade in the specimens of the species is allowed. Liability for the infraction is up to five years in prison and up to 200 million rupiahs fine. A species recovery plan is in place and has been partially implemented.

5. Information on similar species

The subspecies *eleonora* of the Sulphur-crested cockatoo (*Cacatua galerita*) is similar in size and plumage colouration to *C. s. abbotti* (Forshaw, 1977). *C.g. eleonora* is distributed on the Aru Islands (Mollucas islands) and is totally protected in Indonesia (PHPA/LIPI/Birdlife International-IP 1998).

6. Other comments

Low population size, delayed maturation and a possible lack of breeding trees constrain the recovery of the species. As pointed out in several surveys, it will take a long time until sustainable harvesting will be possible (Cahyadin *et. al*. 1994b, Setiawan 1996). Provision of artificial nest boxes may accelerate recovery. However, it can be useful to include this species on Appendix-I of CITES until harvesting numbers in the wild are reached. Indonesia also feels that an appendix-I listing will strenghten the capability to completely halt the illegal trade. It will make it easier to prevent any wild caught birds being passed off as captive-bred individuals.

7. Additional remarks

None.

8. References

Anon., 1999: Government regulations of the Republic of Indonesia, number 7, year 1999, concerning preservation of plants and animal species. CITES Management Authority of Indonesia, Jakarta, 1999.

Agista, D. & Rubyanto, D. 2001. Telaah awal Status, Penyebaran dan Populasi Kakatua-kecil jambul-kuning (*Cacatua sulphurea parvula*) di Taman Nasional Komodo, Nusa Tenggara Timur. PHKA/BirdLife International-Indonesia Programme, Bogor, Laporan No.17.

Agista, D., Sumardin, Hamid,, A., Mallo, F.N., Alam, S., Harjun, and Mamengko, C. 2001. Telaah awal status, penyebaran dan populasi Kakatua-kecil jambul-kuning (*Cacatua sulphurea sulphurea*) di Taman Nasional Rawa Aopa Watumohai, Sulawesi Tenggara dan Pulau Pasoso, Sulawesi Tengah. PHKA/BirdLife International-Indonesia Programme, Bogor. Laporan No.16

Arndt, T., 1994: Zurück in die Freiheit. BBC Wildlife, Juli: 1-2.

AZN, 1995: AZ-Nachzuchtstatistik 1994. AZN 12: 767-810.

AZN, 1997: AZ-Nachzuchtstatistik 1996. AZN 12: 801-845.

AZN, 1999: AZ-Nachzuchtstatistik 1997. AZN 2: 86-126.

AZN, 2000: AZ-Nachzuchtstatistik 1998. AZN 3: 175-187.

AZN, 2001: AZ-Nachzuchtstatistik 1999. AZN 5: 241-251.

Behrens, S., 1995: Ein Hilferuf für den Gelbwangenkakadu. Papageien 9: 280-285.

BirdLife Indonesia, 2001a: Conservation species: Yellow-crested Cockatoo *Cacatua sulphurea*. http://www.birdlife-indonesia.org/yellow.htm.

BirdLife Indonesia, 2001b: Conservation species: Trade in parrots.http://www.birdlife-indonesia.org/trade.htm.

BirdLife Indonesia, 2001c: Conservation species. http://www.birdlife-indonesia.org/conspecies.htm

BirdLife International, 2001: Threatened birds of Asia: The BirdLife International Red Data Book. Cambridge UK: BirdLife International.

BirdLife International-Indonesia Programme. 2001. Conservation of Yellow-crested Cockatoo in Sumbawa: Designing and establishing a Protected Area at Selalu Legini (Tatar-Sepang Catchment, Previously called Tatar-Liangse), Project Report.

Bundesamt für Naturschutz, 2002: Data provided by Birds International to the German Scientific Authority to CITES.

Bürkle, M., 1993 : Zuchtprogramm Orangehaubenkakadu. Papageien 4: 104.

Bürkle, M., 1994a: Das Erhaltungszuchtprogramm Orangehaubenkakadu (*Cacatua sulphurea citrinocristata*). ZGAP Mitteilungen, 10 (1): 18-19.

Bürkle, M., 1994b: Zusammenarbeit mit EEP. Papageien 3: 67.

Butchart, S.H.M., T.M. Brooks, C.W.N. Davies, G. Dharmaputra, G.C.L. Dutson, J.C. Lowen & A. Sahu, 1996: The conservation status of forest birds on Flores and Sumbawa, Indonesia. Bird Conservation International 6(4): 335-370.

Cahyadin, Y., P. Jepson & S. Arif, 1994a: Status *Cacatua sulphurea abbotti* di Kepulauan Masalembo, Indonesia (The status of *Cacatua sulphurea abbotti* on the Masalembo Islands, Indonesia). PHPA/BirdLife International, Bogor, Laporan No. 2.

Cahyadin, Y., P. Jepson & dan M. Syarief, 1994b: Telaah Singkat Status *Cacatua sulphurea sulphurea* di Propinsi Sulawesi Selatan (A rapid status assessment of *Cacatua sulphurea sulphurea* in South Sulawesi Province). PHPA/BirdLife International, Bogor, Laporan No.3.

Forshaw, J. M., 1977: Parrots of the world. T.F.H. Publications, Inc., Neptune.

Hilton-Taylor, C. (compiler) (2000): 2000 IUCN Red List of Threatened Species. IUCN, Gland, Switzerland and Cambridge, UK. xviii + 61pp.

Jepson, P., S. Rais, A.B. Ora & W. Raharjaningtrah, 1996: Telaah Jaringan Kawasan Konservati untuk Pelestarian Nilai-nilai Hutan di Pulau Sumba, Nusa Tenggara Timur (Evaluation of a protected area network for the conservation of forest values on Sumba Island, East Nusa Tenggara). PHPA/BirdLife International, Bogor, Laporan No. 5.

Johnstone, R.E., P. Jepson, S.H.M. Butchart, J.C. Lowen & D. Prawiradilaga, 1996: The birds of Sumbawa, Moyo and Sangeang Islands, Nusa Tenggara, Indonesia. Records of the Western Australian Museum 18: 157-178.

Jones, M.J., M.D. Linsley & S.J. Marsden, 1995: Population sizes, status and habitat associations of the restricted-range species of Sumba, Indonesia. Bird Conservation International 5 (1): 21-52.

Kendall, S.B., 1979: Citron-crested cockatoos in Sumba. Avicult. Mag. 8: 93-94.

Kinnaird, M.F., Sitompul, A.F., Walker, J.S. and Cahill, A.J. 2003. Pulau Sumba. Ringkasan Hasil Penelitian 1995-2002: Dengan rekomendasi konservasi bagi Rangkong sumba, Kakatua cempaka dan habitatnya. PHKA/Wildlife Conservation Society-Indonesia Program, Memorandum Teknis 6.

Low, D., *in litt.,* 2002: provided by Singapore Avi Research Pte Ltd to the German Scientific Authority to CITES.

Mallo, F.N. & I. Setiawan, 1996: Telaah Status *Cacatua sulphurea sulphurea* di Sulawesi Tengah. PHPA/BirdLife International, Bogor, Laporan No. 7.

Marsden, S., A. Cahill & J. Walker, 2001: Nesting ecology of Yellow-crested cockatoos on Sumba, Indonesia. http://www.egs.mmu.ac.uk/users/mdobson/Marsden/Indonesia.html.

Marsden, S.J. & M.J. Jones, 1997: The nesting requirements of the parrots and hornbill of Sumba, Indonesia. Biological Conservation 82: 279-287.

Mee, M., *in litt.,* 2002: provided by Jurong Bird Park, Singapore, to the German Scientific Authority to CITES.

Persulessy, Y., Djawarai, Y.B. and Marut, R. 2003. Survei Populasi dan Distribusi Kakatua-kecil jambul-kuning *Cacatua sulphurea citrinocristata* dan empat jenis paruh bengkok lain di Pulau Sumba (pada blok hutan di luar Taman Nasional). BirdLife Indonesia/ZGAP.

PHPA/LIPI/BirdLife International-IP, 1998: Yellow-crested Cockatoo Recovery Plan. PHPA/LIPI/BirdLife International-Indonesian Programme, Bogor, Indonesia.

Reinschmidt, M., 1999: Gelbwangenkakadus in Hongkong. Papageien 2: 64-68.

Schmidt, D., 2001: Auf 'Vogeltour' in Singapur. Gef. Welt 9: 350-354.

Setiawan, I., 1996: The status of *Cacatua sulphurea parvula* in Nusa Penida, Bali, and Sumbawa, West Nusa Tenggara, Indonesia (Status *Cacatua sulphurea parvula* di Nusa Penida, Bali, dan Sumbawa, Nusa Tenggara Barat, Indonesia). PHPA/BirdLife International, Bogor, Report No. 6.

Setiawan, I., Jati, A., Lesmana, D., Trainor, C. and Agista, D. 2000. Telalah awal Status dan Penyebaran Kakatua-kecil jambul-kuning (*Cacatua sulphurea parvula*) di Pulau Alor, Pantar, Timor Barat, Flores dan Moyo. PHKA/BirdLife International-Indonesia Programme, Bogor. Laporan No.12.

Setiawan, I., Putra, E., Yudha, P., Darjono, Basuki, O.P., Purwandana, D., Suryakusumah, A. and Agista, D. 2001. Telaah status bio-ekologi dan upaya pelestarian Kakatua-kecil jambul-kuning (Cacatua sulphurea) di Pulau Masakambing, Jawa Timur dan Pulau Nusa Penida, Bali. PHKA/BirdLife International-Indonesia Programme, Bogor. Memorandum Teknis No.21.

Stresemann, E. 1940: Die Vögel von Celebes. J. Orn. 88 (3), 438pp.

Trainor, C. 2002. A Preliminary list of Important Bird Areas in East Timor: Interm list of priority sites for biodiversity conservation in Asia's newest country. BirdLife Internationa – Asia Programme.

Trainor, C., Santana, F., Xavier, A., Dos Santos, L., Xavier, F. and Dos Lorenzo, J. in litt. 2004. Status of globally threatened, near threatened and restricted-range birds and internationally significant biodiversity sites in Timor-Leste (East Timor) based on participatory surveys. Summary information with particular reference to the proposed 'Conis Santana National Park (CSNP)'. BirdLife International – Asia Programme.

UNEP-WCMC, 2001: Animals of the World Database. http://www.unep-wcmc.org/species/animals/animal_redlist.html.

WCMC, 2001: World trade data 1981-2000. provided by World Conservation Monitoring Centre.

WCMC, 2002: World trade data 1998-2000. provided by World Conservation Monitoring Centre.

White, C.M.N. & D. Bruce, 1986. The Birds of Wallacea (Sulawesi, The Moluccas & Lesser Sunda Islands, Indonesia). British Ornithologists' Union, c/o Zoological Society, Regent's Park, London, NW1 4RY.

Wilkinson, R., 2000: An overview of captive-management programmes and regional collection planning for parrots. Int. Zoo Yb. 37: 36-58.