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Africa

Overview

Mike Perrin, Philip McGowan, Colleen Downs,
Craig Symes, and Louise Warburton

Africa is a large continent containing relatively few parrot species. There are 21 species that are native to Africa and the islands of Madagascar, Mauritius, and the Seychelles. They inhabit a variety of habitats, ranging from closed forests to arid zones. Most of these species have allopatric distributions (i.e., do not overlap) (Fry *et al.* 1988) and in most parts of sub-Saharan Africa only one species occurs. All species are monogamous and typically both sexes are similar in appearance (sexually monomorphic), although both sexes in arid zone species are dissimilar in appearance (dimorphic), as is the forest-dwelling grey-headed lovebird *Agapornis cana* of Madagascar and the Cape parrot *Poicephalus robustus*.

Continental Africa is home to 18 species belonging to four genera. The African grey parrot *Psittacus erithacus* from West Africa is the only member of the genus *Psittacus* and is a common cage bird in many countries throughout the world. The genus *Poicephalus* contains nine predominantly large-bodied species. There is some uncertainty concerning the taxonomy of the Cape parrot *P. robustus* and recent data suggest that there may be three species rather than the currently accepted one (Wirringhaus unpublished data).

The range sizes of the *Poicephalus* parrots differ greatly. The large Cape parrot *P. robustus* is found in northern Namibia, northern Botswana, north-east South Africa and northern Ethiopia. In contrast the small yellow-fronted parrot *P. flavifrons* is endemic to Ethiopia. Species in the genus are distributed among most major habitat types, ranging from arid scrub (e.g. Rüppell's parrot *P. rueppelli* of northern Namibia and southern Angola) to lowland forests (e.g., Jardine's or red-fronted parrot *P. gulielmi* found in west Africa and locally in central and east Africa).

The third genus found in Africa is *Agapornis*, the small-bodied lovebirds typically found in large flocks. As with the larger *Poicephalus* parrots, geographical range sizes vary across the genus. The widely distributed red-headed lovebird *A. pullaria*, can be found from eastern Sierra Leone to Uganda and Ethiopia whilst the very localised black-cheeked lovebird *A. nigrigenis* is almost entirely confined to an area of less than 5,000km² in Zambia (Dodman 1995). They also occur in most habitats, from arid areas of southern Angola, Namibia, and western South Africa, where the rosy-faced (or peach-faced) *A. roseicollis* lovebird occurs, to forests, which the black-collared lovebird *A. swinderianus* prefers.

Some lovebirds, including Fischer's lovebird, have established feral populations in cities and others have become established on the Seychelles, where there are no naturally occurring parrots.

The only native representative of the *Psittacula* is the echo or Mauritius parakeet *P. eques* from Mauritius, one of the most threatened birds in the world (Collar *et al.* 1994). Another species in this genus, the rose-ringed parakeet *P. krameri*, has become established across a large tract of central Africa from Senegambia eastwards to Uganda and Ethiopia, since it was first introduced in the early 1900s.

Madagascar is home to one lovebird species, the grey-headed, and two vasa parrots *Coracopsis*. Both vasa also occur on the Comoros Islands, and the lesser vasa *C. nigra* is also found in the Seychelles. All three are to be found in groups, the vasa parrots being found in small groups, and the lovebird in flocks of up to 30 birds. The lesser vasa, *C. nigra*, is more likely to be found in forest habitat than the greater vasa and can be found at higher altitudes (Langrand 1990). Although considered common (Langrand 1990), the rapid pace of forest loss on Madagascar suggests their status should be carefully monitored.

The biological characteristics of the two main genera, *Poicephalus* and *Agapornis*, are strikingly different and may influence their responses to human interference. The *Poicephalus* parrots are large and tend to remain in pairs whereas the smaller lovebirds tend to be found in groups. The lovebirds have a much greater reproductive potential as they tend to have larger clutches (three to six in the wild, up to eight in captivity, as opposed to one to four in *Poicephalus*) and their incubation period is a few days shorter than in the larger parrots (Fry *et al.* 1988). As they can also lay two clutches in a season, there is the potential for increasing numbers much more rapidly than is possible with the *Poicephalus* species.

Threats

The diverse habits of the African parrot fauna is reflected in the variation in pressures facing the species. Some species appear to be at low risk of extinction at present, such as Meyer's parrot *Poicephalus meyeri*, despite occasional illegal trapping. Others are seriously at risk, such as the echo parakeet which is considered to be Critically Endangered. Across the group as a whole the two main threats are thought to be trapping for the bird trade and habitat loss. Table 5 provides a list of the threatened parrot species in Africa.

The bird trade

Trapping for the bird trade has long been a problem for some species, including Fischer's, masked or yellow-collared *Agapornis personatus*, black-cheeked *Agapornis nigrigenis*, and rosy-faced *Agapornis roseicollis* lovebirds, the Senegal parrot *Poicephalus senegalus*, and the African grey parrot *Psittacus erithacus*. Other species are now appearing in the bird trade and such trade may pose a significant threat for species such as Rüppell's, red- or orange-bellied *P. rufiventris* and Jardine's parrots. Trade is predominantly from Senegal, Cameroon, and the Democratic Republic of the Congo (*Poicephalus* and *Psittacus*) in West Africa, and Tanzania (*Poicephalus*) in East Africa.

A key problem here is the lack of appropriate legislation, and the lack of enforcement of such legislation where it exists. Addressing this issue and those related to it will be necessary before Africa's threatened parrots can be considered safe from extinction.

Habitat loss

Habitat loss faces many species, but it is difficult to predict how the impact of often subtle changes in land-use may affect parrots. For the large-bodied parrots that tend to be dependent upon climax forest the effects may be clear (e.g., Cape parrot), but for species inhabiting open country, changes can be far from obvious (e.g., black-cheeked lovebird). Whilst the effects of outright habitat loss, such as deforestation, might be straightforward to determine, the consequences of a decrease in the suitability of habitats through increasing desertification and the intensification of agricultural practices are far less easy to assess, but may be no less dramatic.

Conservation solutions

Increasing the current knowledge base

In confronting the pressures facing Africa's parrots, the major constraint is one of lack of knowledge. The need for additional information on birds in the wild is one of the overriding issues in African parrot conservation. The establishment of an informal network of people concerned for the future of parrots in the wild would be helpful (see Box 18). Considering the interest in parrots in the Neotropics and Australasia, for example, the state of knowledge of Africa's parrots is very poor. Consequently, opportunities to raise awareness of the plight of these species among wildlife managers, legislators, researchers, bird-watchers, and the public in general must be taken wherever possible.

More knowledge is required on birds in the field before their conservation status can be determined with any

confidence, and realistic and effective conservation measures can be proposed. For example, the yellow-faced parrot *Poicephalus flavifrons* from Ethiopia is thought to have a small distribution and to favour juniper and yellow-wood forests. The current status of both the species and the habitat is not known. A second example is the grey-headed lovebird *Agapornis cana* from Madagascar, which was previously thought to be common throughout most of the island (Langrand, 1990). There is now concern that trapping is beginning to seriously affect its status in the wild (O. Langrand *per* Mike Perrin pers. comm. 1997) and consequently there is a need to survey the species and determine the severity of its plight. Whilst trade is thought to have been responsible for the dramatic crash in the population of the black-cheeked lovebird, it is not clear why numbers have remained low since trapping stopped, although several explanations have been advanced (see Box 19).

It is clear that trade can be a problem and addressing this complex task is difficult. The money brought in by trading in these birds is important in many rural economies. Although appropriate legislation often exists, enforcement is typically poor for a variety of reasons. From the biological view point it is obvious that far too little is known of wild populations of traded parrots to be confident of their continued survival. Assessments similar to those recently provided for Fischer's lovebird (Moyer 1995) of the status of populations from which birds are caught are urgently needed.

Statutory protection

The level of protection accorded to parrots by existing protected areas is quite variable. Whilst notification of an area as protected is no guarantee of security, it can be the first step in ensuring the long-term survival of a species. No comprehensive assessment exists of the extent to which protected areas are effective in maintaining parrot populations. Where such knowledge does exist it indicates considerable variation across the group in the level of legal protection offered. Some species are well represented in protected areas, such as Fischer's lovebird, which has a substantial part of its range within the Serengeti National Park, Maswa Game Reserve, and Ngorongoro Conservation Area in north-central Tanzania. Other species, however, are quite under-represented. The distribution of the threatened Rüppell's parrot barely reaches the Etosha National Park in Namibia and much of the home ranges of known Cape parrot groups lie outside protected areas (Craig Symes pers. comm. 1997), making them vulnerable despite some level of protection (see Box 20). The recent designation of the 70km² Black River Gorges National Park on Mauritius includes the entire known range of the echo parakeet and provides the secure habitat that is a crucial component in the recovery programme for this

species. This programme has used, and is continuing to use, biological knowledge to underpin creative recovery techniques (see Box 21).

In some cases, however, protected areas may not be required. For example, Meyer's parrot is distributed in areas of low human density and is not often disturbed. Consolidating this knowledge of protected area coverage and, perhaps more importantly, the effectiveness of these areas for parrots is a prerequisite for an overall strategy for the conservation of Africa's parrots.

Priority projects in Africa

- **Increasing the effectiveness of parrot conservation activities in Africa.** (Box 18)
- **Status survey and conservation of the black-cheeked lovebird in Zambia.** (Box 19)
- **Status survey and conservation of the Cape parrot in South Africa.** (Box 20)
- **Intensive management of the echo parakeet *Psittacula eques* on Mauritius.** (Box 21)

Box 18. Increasing the effectiveness of parrot conservation activities in Africa.

Mike Perrin and Phillip McGowan

Aim: To build a network of interested individuals and organisations that will gather and distribute information in order to assist parrot conservation.

Justification: Information on parrots in Africa is both scarce and difficult to locate, despite the considerable efforts of a few individuals. In order to build upon several recent parrot-orientated initiatives on the continent it is vital to establish and maintain a network of motivated parrot conservationists who will be able to assist with the development, execution, and evaluation of project proposals, and provide advice for government agencies and both local and international organisations.

Project description: An African parrot network will require a base from which to work. An ideal base would be the Research Centre for African Parrot Conservation at the University of Natal in Pietermaritzburg, South Africa. A facility to enable a group of interested parties to be set-up is required. This process however is likely to require considerable effort. Relevant personnel are likely to be involved in a wide variety of activities, including research, bird-watching, general natural history, trade monitoring, or government service. Identifying appropriate personnel and making them aware of the network will involve announcements and articles in appropriate magazines, direct contact, and displays at relevant conferences. Countries where contacts are particularly sought at the moment include Ethiopia, Tanzania, Senegal, Zambia, and Madagascar. Once established, a means of managing communication, such as a newsletter, should be considered. A newsletter, together with efficient communication will incur routine administrative costs.

Contact: Mike Perrin.

Box 19. Status survey and conservation of the black-cheeked lovebird in Zambia.

Louise Warburton

Aim: To identify the ecological requirements of the black-cheeked lovebird *Agapornis nigrigenis* so that a conservation strategy for its survival can be prepared.

Justification: The black-cheeked lovebird is Africa's most threatened lovebird. It is thought to have suffered a major decline in numbers in the 1920s (Collar *et al.* 1994) because of very heavy exploitation. This resulted in a ban on its export from Zambia from 1930, but trade is thought to have remained brisk up to the 1960s (Dodman 1995). At the peak of trapping in 1929, 16,000 lovebirds were trapped in four weeks (Moreau 1948), a figure that is almost certainly impossible today as the population is estimated to number around 10,000 individuals (Dodman 1995). Why this species has not increased in numbers since extensive trapping declined is a mystery, although a change to sowing maize crops locally between the 1930s and 1950s may have led to a food shortage for a species that eats smaller seeds, such as the previously farmed millet and sorghum. Inspection of rainfall data over the last 45 years has shown a marked downward trend, coinciding with a reduction in the availability of surface water (Dodman 1995). This surface water may be critical during the dry season for a species thought to need water daily and which is apparently selective about the sources from which it will drink. A detailed assessment of the species' distribution in relation to habitat features, such as various types of water sources, crop coverage, and vegetation, is required before a realistic conservation strategy can be advocated. In addition, other factors that may affect lovebird abundance, such as the importance of crops as food sources, and breeding success, should be investigated.

Project description: Fieldwork should address three issues: population surveys, use of crops and water, and breeding success. Surveys should aim to determine the distribution and abundance of lovebirds in both the wet and dry seasons and attempt to identify factors that are associated with high densities. Data collection will probably rely on both local interviews and counts of birds. Counts can be made at pools where lovebirds drink and habitat measurements should be made at such sites. Comparison with habitat measurements from other sites, such as unused water-sources, may then reveal habitat features that are associated with high lovebird numbers. Such a survey would provide a baseline for the establishment of a long-term monitoring programme. As the change in agricultural practices has been suggested as a cause for concern for black-cheeked lovebirds, it is desirable to establish how dependent the species is upon crops, the amount they consume and the damage that they cause. Finally, the species may not have increased in the absence of trapping and in the presence of apparently favourable sorghum and millet because of constraints implicit in its breeding behaviour. Other lovebirds are able to reproduce rapidly, and an investigation of the breeding biology of this species may reveal why it has so far failed to do so. If feasible, movements should also be studied so that monitoring can track changes in numbers and resource availability and use more effectively.

Contacts: Mike Perrin, Louise Warburton.

Box 20. Status survey and conservation of the Cape parrot in South Africa.

Colleen Downs and Craig Symes

Aim: To assess the distribution and abundance of the Cape parrot *Poicephalus robustus robustus* throughout its range and assess its ecological requirements so that appropriate management can be advocated.

Justification: Whilst numbers of this taxon, which should probably be considered a full species (Wirminghaus unpublished data), are reasonably well known in the Natal Midlands, there is very little information from the other 70% or so of its range since the 1960s (Skead 1964, 1971). Considered Vulnerable in the South African Red Data Book (Brooke 1984), numbers are known to have declined considerably in the Natal Midlands during the last 10–20 years (Wirminghaus unpublished data, C.J. Skead *per M. Perrin pers. comm.* 1997). An assessment of its current status throughout its range is urgently required. The deterioration of the Afro-montane forests during this period appears to have led to the decline of the parrot and thus the status of the species' habitat also requires investigation. Of particular concern is the availability of trees with suitable nesting sites which seems to be limiting the reproductive output of the Natal Midlands population. Whilst the decline in the extent of habitat is an obvious pressure on the Cape parrot, the increasing distances between shrinking forest patches may also be causing stress to the species (Wirminghaus unpublished data). If different forest patches are used for different activities, then increasing distances between forest patches may be adversely affecting the species (Wirminghaus unpublished data).

Project description: Fieldwork should address three issues: population surveys, forest quality, and the species' use of available resources. Surveys should aim to determine the distribution and abundance of the Cape parrot throughout its entire range and attempt to identify factors associated with high densities. The network of informed and enthusiastic bird-watchers in much of the species' range can help to identify potentially important forests. This information might then be supplemented by searches made by a survey team, which will be able to target previously identified areas. In each area detailed counts of birds should be made and forest quality determined. If possible, the impact of understorey cattle grazing on tree regeneration should be assessed, as should the effects of other human activities, such as the collection of small saplings and the debarking of trees for medicinal uses. These practices may ultimately influence nest and roost site availability. The movements of individual birds between forest patches (Wirminghaus 1997) should be investigated in order to understand whether the reduction in size of many forest blocks is adversely affecting the parrots. Ideally, this would be achieved by comparing breeding success in a population inhabiting an area where forest blocks are relatively large and close together with a population that is reliant on forest blocks that are smaller and more widely dispersed. Following marked birds (perhaps using radio-telemetry) should reveal which patches are used for which activities and consequently what management is required.

Contacts: Colleen Downs, Mike Perrin, Craig Symes.

Box 21. Intensive management of the echo parakeet *Psittacula eques* on Mauritius.

Kirsty Swinnerton

Aim: To increase the number and success of breeding echo parakeets *Psittacula eques* using intensive management techniques until there is a stable population in excess of 300 birds dependant on minimal management.

Justification: Widespread clearing of native forests, invasion of forests by woody weeds, introduction of alien predators and competitors greatly reduced echo parakeet numbers to 8–12 individuals and a 50km² range by 1986. If the management programme had not begun in 1973 it is probable that the echo parakeet would have become extinct. The continuing existence of the echo parakeet population is dependant on addressing several factors: degradation of forests by introduced woody weeds, predator control, food shortages, and competition with alien species for nest sites and food supplies. The management programme and extensive surveying of the Black River Gorges National Park (the echo parakeet's last refuge) has resulted in a population increase from 16–22 individuals in 1993 to 84–95 individuals in March 1997.

Project description: The echo parakeet management programme is run in conjunction with the Government of Mauritius and the Mauritian Wildlife Foundation alongside other endangered species programmes. Additional sponsors include the World Parrot Trust and the Jersey Wildlife Preservation Trust. The programme determines the conservation needs of the echo parakeet using a "learn as you go" approach building on the previous breeding season's results and knowledge.

There are several key components to the management programme. Predator control (aimed primarily at ship rats *Rattus rattus*) using intensive anti-coagulant poison grids or surrounding cavity entrances with a barrier which cannot be climbed. Food shortages are resolved using a supplementary feeding programme and during chick-rearing clutches are reduced from a maximum of three to a single nestling. Frequent nest checks allow underweight nestlings to be rescued. Productivity is increased by removing first clutches from selected breeding groups. Parasite (mainly nestfly *Passeromyia heterochaeta*) and fungal (*Aspergillus*) infestations are reduced by using treated nest linings. Eggs and chicks are fostered between wild nests to spread productivity and reduce risk. Harvested clutches and rescued nestlings are hand-reared in a special facility and then released into the wild population using ultra-soft release techniques. These released birds are trained to use supplementary food in special food hoppers and nest boxes. Research activities include ringing as much of the population as possible to determine breeding success and mortality and monitoring the survival and recruitment to the breeding population of both the released and wild fledged juveniles. Small fenced and weeded Conservation Management Areas are allowing impressive regeneration of the native vegetation and these are important echo parakeet feeding and nesting sites. Veterinary support is provided by the International Zoo Veterinary Group.

Flexibility is an important attribute to the programme enabling fast response to management changes and problems. The echo parakeet population will need for the foreseeable future some form of management assistance in the form of supplementary feeding and alternative nest sites to overcome environmental deficiencies.

Contact: Carl Jones.

Species accounts

Table 5. A list of African parrot species that are considered threatened using IUCN Red List criteria, including one threatened subspecies for which there is evidence that it may be a distinct species. Species are listed in alphabetical order by their scientific name, together with their distribution and threat status. The criteria under which each species qualifies are given in the appropriate species account. *Denotes changes from *Birds to Watch 2* (and, therefore, the 1996 IUCN Red List of Threatened Animals), which have been agreed to by BirdLife International who maintain the IUCN list of threatened birds.

English name	Scientific name	Distribution	Threat category
Black-cheeked lovebird	<i>Agapornis nigrigenis</i>	South-west Zambia	Endangered
Echo parakeet	<i>Psittacula eques</i>	South-west Mauritius	Critically Endangered
Possible species			
Cape parrot	<i>Poicephalus (robustus) robustus</i>	Eastern Cape, Natal Midlands and eastern Transvaal in South Africa	Vulnerable
Species proposed for consideration for inclusion on the Red List			
Rüppell's parrot	<i>Poicephalus rueppelli</i>	Central and north-western Namibia and extreme southern Angola	To be considered

Black-cheeked lovebird *Agapornis nigrigenis*

Contributor: Louise Warburton.

Conservation status: IUCN: Endangered (B1+2c; C1; C2b; D1; D2).

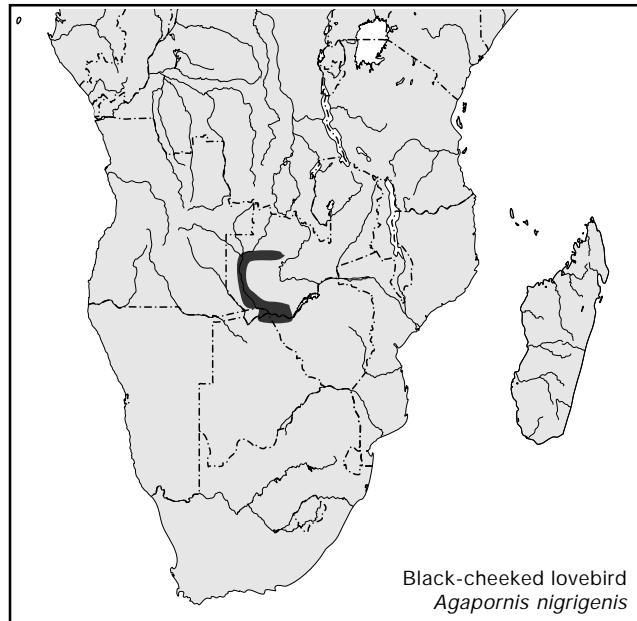
CITES: Appendix II.

National protection status: Information unavailable.

Distribution and status: The black-cheeked lovebird appears to occupy approximately 2,500km² within a core extent of occurrence of 4,550km² in *Colophospermum mopane* woodland between the Zambezi River to the south and the Kafue River to the north in south-west Zambia. It may still occur in small patches elsewhere, such as in

Namibia's Caprivi Strip (Dodman 1995), although there are no recent reports (R.E. Simmon *per* Mike Perrin *in litt.* 1997.). During the dry season the birds retreat into two blocks of mopane woodland along the Zambezi (3,200km²) and Kafue (1,350km²) Rivers. It seems never to have recovered from heavy exploitation for the cagebird trade in the 1920s, which probably continued into the 1960s (Dodman 1995) despite a 1930 wild-caught trade ban.

Threats: The current threats to this species are not clear, although the number of suitable water-sources is thought to be declining, reflecting gradual (presumed natural) desiccation (Dodman 1995) and which may be seriously affecting dry season water availability (see also ZOS 1994). Additional reasons for continued low numbers may include the change in agriculture from sorghum and millet to



maize crops, and presumed specific habitat requirements. Threats include habitat loss and, more speculatively, hybridisation and/or competition with feral or naturally invasive Lilian's lovebird *A. lilianae* (ZOS 1980, 1982), and the spread of disease from captive birds (see Kock 1989). There were 212 specimens recorded in international trade between 1991 and 1995, 170 of which were in 1992 (CITES Annual Report database). The species is now captive bred in South Africa.

Action: Fieldwork recently started is addressing three issues: population surveys, use of crops and water resources by birds, and breeding success. (See Box 19)

Echo parakeet *Psittacula eques*

Contributor: Kirsty Swinnerton.

Conservation status: IUCN: Critically Endangered (D1). CITES: Appendix I. National protection status: Fully protected.

Distribution and status: This species is now confined to 40km² of highly degraded remnant native forest within the 70km² Black River Gorges National Park in the uplands of south-west Mauritius. On Rodrigues a related species *Psittacula exsul* survived until about 1876 (Cheke 1987) and on Reunion a form, probably conspecific with the Mauritius echo parakeet, disappeared much earlier.

The population plummeted from 600–800 individuals in the 1750s (Jones and Owadally 1988) to an estimated 8–12 individuals in 1986 (Jones and Duffy 1993). As a result of an intensive management campaign and recent surveys, the population in March 1998 was 93–107 birds, with 20 of these in a captive breeding programme and individuals in a release programme (Thorsen *et al.* 1998). Surveys in 1996 and 1997 located 8 new breeding groups giving a total of 15 wild breeding groups. In the 1997/98 season, 12 of these groups bred and produced 17 fledglings, seven in the wild and 10 in captivity. Fifty-eight nestlings have now fledged from wild eggs in the past three breeding seasons, significantly increasing the total population, although only 19 individuals have fledged into the wild (Thorsen *et al.* 1998). In 1997 three captive-bred or reared birds were successfully released into native forest and a further 11 individuals are currently being released.

Threats: Food shortage and lack of suitable habitat as a result of massive habitat loss is considered a major factor in the species' decline. Only 1.27% of native forest remains (Dwivedi and Venkatasamy 1991, in Duffy 1994). Depredation of eggs and nestlings, competition for food sources by introduced mammals (particularly rats and



macaques), nest fly infestations, and competition for nest cavities, compounded by cyclones, are the major factors in the species' decline and continuing vulnerability. Two birds were moved internationally (as *P. echo*) between 1991 and 1995 (CITES Annual Report database); both went to Jersey Zoo from Mauritius in 1991, for the breeding programme.

Action: Conservation efforts were initiated in 1973 and intensified in 1987, focusing on habitat protection and improvement (fenced and weeded forest plots), rat control around nest sites, manipulation of breeding, supplementary feeding, and provision of nest boxes. Between 1993 and 1995 the programme was further refined. The main emphasis is now on predator control, nest cavity improvement, clutch manipulations (including harvesting eggs, downsizing of broods to one chick per nest, fostering of removed chicks and eggs, and hand-rearing removed chicks), frequent examination of active nests, and rescuing chicks and eggs from failing nests. A release programme of hand-reared chicks began in 1997 and is continuing. It is intended that released birds will encourage wild birds to take supplemented food. The captive breeding programme will continue. The echo parakeet population is likely to be dependent upon some form of management in the near future. (See Box 21).

Account for threatened taxa that may be a full species

Cape parrot *Poicephalus (robustus) robustus*

Contributors: Colleen Downs, Mike Perrin, and Craig Symes.

Conservation status: IUCN: To be considered. CITES: Appendix II.

National protection status: Information unavailable.



Reason for taxonomic uncertainty: The Cape parrot is usually considered to be one of three subspecies. Multivariate morphometric analyses suggest that it is more appropriately considered a full species, based on electrophoresis, karyology (the study of cell nuclei), DNA (deoxyribonucleic acid) fingerprinting, and vocalisations (Wirminghaus unpublished data).

Distribution and status: This species is now restricted to small, widely dispersed populations in the KwaZulu-Natal Midlands and eastern Mpumalanga in South Africa. The Cape parrot is a habitat specialist that has declined gradually and continually over the last 10–20 years (Wirminghaus unpublished data, C.J. Skead *per* M. Perrin pers. comm. 1997) through habitat loss and fragmentation. Large blocks of Afro-montane forest have become much reduced in size (Cooper 1985), so populations are further apart than historically and are also separated by intensively managed farms and exotic tree plantations that occur throughout most of its range. The taxon may qualify as Vulnerable (B1+2b,c).

Threats: Fragmentation may be reaching the point where the distances that birds travel between patches is adversely affecting foraging efficiency (Wirminghaus unpublished data). This, in turn, may be reducing individual survival and breeding success. Legal and illegal extraction of potential nest trees (predominantly old and dead *Podocarpus* spp.) is likely to have a serious impact on breeding as nest sites are already limited (Wirminghaus unpublished data). Increased rarity in the wild and the lack of breeding success in captivity has led to a ten-fold increase in price and demand, resulting in birds now being trapped for trade. Any harvesting of birds from the wild would further damage already depleted numbers. The impact of incidental, illegal hunting is not known. There were 6,354 wild caught specimens of the species as currently accepted (i.e., including all three subspecies) recorded in international trade between 1991 and 1995, with an annual

maximum of 3,871 individuals in 1994 (CITES Annual Report database). Most of this trade, however, is from Tanzania and, therefore, unlikely to be this taxon. During a recent nationwide census of the wild parrots, two birds were seen that were apparently feather plucked, mimicking the symptoms of beak and feather disease. Recently, eight of eight wild caught parrots have shown to be positive for the disease. This has potentially drastic consequences for wild and captive birds. Any wild caught birds introduced to existing colonies of African or other species of parrots may well spread infection. It is not known whether the wild parrots have natural resistance or are particularly sensitive to the disease.

Action: Clarification of the taxonomic status is currently underway at the Research Centre for African Parrot Conservation at the University of Natal at Pietermaritzburg and involves morphometric analysis, DNA fingerprinting, and vocalisations. Fieldwork on behalf of this taxon should address three issues: population surveys, forest quality, and the species' use of available resources. Surveys should aim to determine the distribution and abundance of the Cape parrot throughout its entire range (through the continuation of the Cape parrot Big Birding Day) and attempt to identify factors that are associated with high densities. Following marked birds (perhaps using radio-telemetry) should reveal which patches are used for which activities. The monthly monitoring of populations at Hlabeni Forest should indicate the viability of this population and the current nest box erection project will determine whether nest sites are a limiting factor for the population. Subsequently, necessary conservation measures for the survival of this species and its habitat can be identified. (See Box 20.)

Account for species proposed for consideration for inclusion on the Red List

Rüppell's parrot *Poicephalus rueppelli*

Contributors: Mike Perrin and Richard Selman.

Conservation status: IUCN: To be considered.
CITES: Appendix II.

National protection status: Information unavailable.

Distribution and status: Rüppell's parrot is found in dry thornbush, riverine woodland, and wooded hills of the highlands of central and north-western Namibia and south-western Angola (R. Selman *in litt.* 1998). The patchy distribution of the species makes assessing population size difficult. However, the population was recently estimated at 9,700 individuals \pm 6,665 individuals on the basis of



atlas data (Robertson *et al.* 1995). This has subsequently been revised to 29,466 individuals \pm 16,392 individuals (Jarvis and Robertson 1997) using knowledge of the species' habitat and the distribution of vegetation, climate patterns, and altitude in Namibia. There are no recent data on the

species' status in Angola, but it is believed that much of its range lies in Namibia (Robertson *et al.* 1995).

Threats: Illegal capture for export through South Africa to Europe and North America is believed to have led to a decline in numbers of this species. The capture of wild birds is illegal in Namibia and only captive-bred birds can be sold. However, wild caught birds are being traded, leading to concerns about a decline in the population caused by an estimated 1,000 birds being taken from the wild per year. This suggests a decline rate that may put the species at risk. Locals report the loss of Rüppell's parrots from some sites and dwindling numbers elsewhere, citing illegal capture as the reason. The reproductive rate, availability of nest sites, etc. suggest that the population would be at low risk of extinction if illegal capture were stopped. There were 12 wild caught specimens recorded in international trade between 1991 and 1995. Ten were recorded in 1994 and two in 1995 (CITES Annual Report database).

Action: An existing review of wildlife trade legislation in both Namibia and South Africa may help to resolve the problem of illegal capture. Conservation action on behalf of this species should concentrate on supporting this legislation and promoting its implementation.