

## THE IMPORTANCE OF THE KRUGER NATIONAL PARK FOR BIRD CONSERVATION IN THE REPUBLIC OF SOUTH AFRICA

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*Abstract* – One hundred and two species of birds that are thought to be vulnerable in South Africa have been reported from or are likely to occur within the Kruger National Park. These species are considered in relation to their distribution and status in South Africa and the neighbouring countries. The following are suggested as conservation priorities for birds in the Park:

1. Re-establish the extinct Yellow-billed Oxpecker.
2. Investigate the suite of large carnivorous and scavenging birds that have declined over much of their range elsewhere in South Africa.
3. Investigate the species associated with riparian and wetland habitats in the Park.
4. Investigate the tropical species that are confined to the Park within South Africa.

### *Introduction*

The avifauna of the Kruger National Park (KNP) has never been thoroughly and systematically surveyed, and even rough census figures are only available for a fraction of the more than 450 species that have been recorded in the Park. A collation of the existing records for the KNP up to the end of 1970 was made (Kemp 1974), and a decade later an extension of this work is nearing publication (Newman *in prep.*).

One hundred and two bird species which breed in South Africa have been designated as vulnerable and possibly warrant conservation attention (Siegfried, Frost, Cooper & Kemp 1976). A supplementary list of 35 species was also provided, and since then Brooke (1978) has suggested the addition of a further 25 species and I will propose the inclusion of a further six. Of this total of 167 species, no less than 102 species have been reported to occur or are likely to occur within the Kruger National Park.

Surveys that are underway or completed for areas outside the KNP provide perspective for the importance of the Park to bird conservation within the Republic of South Africa (RSA). In the Transvaal a survey of the distribution of all bird species is complete (Kemp *in press*) and a special survey of raptors and vulnerable species is well underway (Tarboton 1978). Natal has previously been surveyed (Clancey 1964) and recording of the distribution of all bird species is nearing completion (Cyrus & Robson 1980). In the Orange Free State a survey of all bird species is underway (Farkas *pers. comm.*) and a special survey of vulnerable species is well advanced (Geldenhuys *pers. comm.*). In the Cape Province a survey of raptors is underway (Boshoff 1979; Vernon 1978). In the RSA as a whole there are specialist groups surveying vultures and cranes, and a data bank has been established for all vulnerable species in the RSA (Brooke 1978). In addition surveys of birds in the adjacent countries of Swaziland, Mocambique, Zimbabwe and Botswana are available (Culverwell *pers. comm.*; Clancey 1971; Irwin *in prep.* and Smithers 1964 respectively).

It is hoped that this report will provide a balanced assessment of which of the vulnerable species in South Africa are particularly dependant on the KNP for their existence as breeding species within South Africa. Suggestions will be made as to which species deserve the highest priority for study within the Park.

#### *Conservation priorities for the Kruger National Park*

A systematic list of the 102 species designated as vulnerable breeding species in the RSA, and occurring or likely to occur in the Park, is given as an Appendix. Ordering the species according to their need for conservation attention is difficult due to the different factors affecting each species which must be compared. It should be stressed that none of the species can be considered endangered when its world range is taken into account. Two species now appear to be extinct, or almost so, within the RSA, the Egyptian Vulture and Yellow-billed Oxpecker. One other species, the Cape Vulture almost qualifies as a breeding South African endemic but has no important breeding habitat within the Park.

The vulnerable species in the KNP can best be considered in a number of categories:

1. Probable misidentifications (7 species). Bittern, Red-winged Pratincole, Senegal Coucal, Spotted Creeper, Black-fronted Bushshrike, Purple-banded Sunbird and Yellow-bellied Sunbird.
2. Non-breeding visitors (12 species). Pink-backed Pelican, White Pelican, Greater Flamingo, White Stork, Cape Vulture, Palm-nut Vulture, Booted Eagle, Long-crested Eagle, Stanley Bustard, Lesser Black-winged Plover, Carmine Bee-eater and House Martin.
3. Not yet confirmed to occur in the KNP (10 species). Pygmy Falcon, Blue Quail, Blue-spotted Wood-dove, White-eared Barbet, Broadbill, Blue-throated Sunbird, Golden-backed Pytelia, Grey Waxbill, Broad-tailed Paradise Whydah and Lemon-breasted Canary.

4. Widespread and common (2 species). Crested Francolin and Woodland Kingfisher. Both species occur widely both within and outside the KNP and are subjectively common so that they probably do not warrant vulnerable status.
5. Wet summer visitors (10 species). Rufous-bellied Heron, Dwarf Bittern, Openbill, Pygmy Goose, Lesser Gallinule, Lesser Jacana, Long-toed Plover, Black Coucal, Mangrove Kingfisher and Pied Mannikin. These species are rare in the RSA, especially as breeding species, and their presence depends on summers of high rainfall when very few restricted localities provide the exact conditions of flooding and vegetation development necessary to support a breeding attempt. The conservation of these species depends primarily on the maintenance of healthy populations outside South Africa. Identification of their preferred habitat during invasions, especially breeding habitat, and conservation of this habitat is all that can be done to ensure their continuance as South African breeding species. Most records of the waterbirds in this category come from floodplains and pans in the extreme north of the KNP and it would be useful to understand the ecology of the favoured pans to determine what makes them suitable for breeding.
6. Rare and little known species (12 species). African Hobby, Red-necked Falcon, Cuckoo Falcon, Bat Hawk, Ayres' Hawk Eagle, Hot-tentot Button-quail, African Cuckoo, White-breasted Cuckoo-shrike, African Golden Oriole, Grey Penduline Tit, Greencap Eremomela and Cut-throat Finch. These species are so little known that it is impossible to make conservation suggestions for them. Surveys may reveal that some are not uncommon, merely being secretive or difficult to identify. All that can be done is to preserve habitat in which they are recorded, especially any nest sites that are found for the raptors.
7. Widespread and common outside the KNP (10 species). Black Stork, Peregrine, Ovambo Sparrowhawk, Black Sparrowhawk, Crested Guinea-fowl, Brown-necked Parrot, Grass Owl, Grey-hooded Kingfisher, Purple Roller and Green Twinspot. The Park cannot be primarily responsible for the conservation of these species, but this does not mean that protection of preferred habitat of these species within the KNP is irrelevant. This is especially true for regular nesting sites of such species as Black Stork, Peregrine and Black Sparrowhawk.
8. Eastern (tropical) species (20 species). Some of these species occur in the lowveld of the Transvaal and Natal: Marabou, Dark Chanting Goshawk, Black-bellied Korhaan, Brown-headed Parrot, Barred Owl, Pennant-winged Nightjar, Broad-billed Roller, Stierling's Barred Warbler, Yellow-spotted Nicator and Yellow White-eye. Others are confined to the lowveld of the Transvaal: Dickinson's Kestrel, Mourning Dove, Thick-billed Cuckoo, Mottled Spinetail, Arnot's Chat and Long-tailed Glossy Starling. For most of these species the majority of records and main areas of suitable habitat occur within the KNP so

that their conservation depends primarily on the Park. Finally there are some species which are only known from within the KNP in South Africa: Boehm's Spinetail, Racquet-tailed Roller, Mosque Swallow and Red-throated Twinspot. Obviously the future of these species in the RSA rests entirely with the Park.

9. Riparian species (9 species). This group of species are associated with the larger rivers and their riparian vegetation: Goliath Heron, White-backed Night Heron, Saddlebill, Woolly-necked Stork, African Fish Eagle, Finfoot, White-crowned Plover, Fishing Owl and Wattle-eyed Flycatcher. All these species have populations outside the KNP in the RSA, especially in northern Natal. However, most of the species are large birds with extensive spatial requirements, and hence they exist at low population densities which are further limited by their restricted habitat preference. The extent of the KNP relative to other conservation areas in the RSA makes the KNP especially important for these species. Their restricted habitat preference makes surveying of these species relatively easy and I would suggest a study of the riparian suite of vulnerable species as a single conservation operation. Possibly special attention should be given to Saddlebill, Woolly-necked Stork, White-Crowned Plover and Fishing Owl as being the species most dependant on the Park.
10. Large and very large birds (8 species). These large species have various conservation considerations and are best treated separately. The Ostrich has not previously been listed as a vulnerable species but is included on the basis that the uncontaminated gene pool of the southern African subspecies may only occur in a few areas (Liversidge 1978). This has particular relevance if introduction of additional stock into the KNP is considered. The Lappet-faced, White-headed and Hooded Vultures have also not been previously designated as vulnerable. They are included on the basis of their rare occurrence outside the KNP in the Transvaal (Tarboton 1978) and their limited range elsewhere in South Africa. The future of all these vultures may rest with the food supplies available in the Park. The other species are Martial Eagle, Bateleur, Kori Bustard and Ground Hornbill. They are all showing signs of range reduction and/or population decline, especially the Bateleur and Ground Hornbill.
11. Extinct species (for the KNP.) (2 species). The Egyptian Vulture is unlikely to have been more than a non-breeding visitor to the KNP and may still be found as a rare vagrant. The Yellow-billed Oxpecker was once widespread in the RSA, including the KNP, but is now extinct and must be most deserving of conservation attention. The KNP would seem to provide the ideal environment for attempting to re-establish the species in South Africa. In conclusion, I would suggest the following as bird conservation priorities for the Kruger National Park:

- A. Re-establish the Yellow-billed Oxpecker.
- B. Survey the suite of large scavenging and carnivorous birds that have declined elsewhere in the RSA, especially the Lappet-faced Vulture, White-headed Vulture, Hooded Vulture, Bateleur and Ground Hornbill. This survey should include a study of the comparative feeding ecology of the species as the fundamental factor which is likely to be effecting their decline.
- C. Survey the species associated with the riparian habitat, if possible including a survey of the northern wetlands and their associated species.
- D. Survey the tropical species that are confined to, or occur largely within, the KNP in South Africa.
- E. Collect any information on the remaining vulnerable species, especially noting breeding sites for consideration for protection during planning and development within the Park.

The above priorities have been selected since they revolve primarily around protection of certain habitat types, rather than protection of specific species. Within a complex ecosystem such as the KNP, conservation of habitats and therefore their associated species is likely to be more fundamental and practical than trying to devise conservation plans for each of the species involved. Indeed the success of conservation of a habitat may be measured by the complement of species which it supports. However, I also present the top 10 species which I believe deserve study in the Park, in case any single-species studies are undertaken. This assessment takes into account the distribution and breeding status elsewhere in the RSA, a subjective judgement of the abundance of the species in and out of the KNP, any indications of a decline in the species in South Africa, and the conservation attention already given to each species. My list of species in descending order of priority is Yellow-billed Oxpecker, White-headed Vulture, Hooded Vulture, Saddlebill, White-crowned Plover, Lappet-faced Vulture, Racquet-tailed Roller, Mourning Dove, Mosque Swallow and Boehm's Spinetail. Finally it must be stressed that new information might indicate that other vulnerable species deserve more attention and the priorities of individual species must be continually reviewed.

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SYSTEMATIC LIST OF VULNERABLE BIRDS BREEDING IN  
THE REPUBLIC OF SOUTH AFRICA WHICH OCCUR IN THE  
KRUGER NATIONAL PARK

This list covers those species previously mentioned as being vulnerable breeding species in South Africa (Siegfried *et al.* 1976; Brooke 1978), with the addition of six species which might also warrant vulnerable status. Species which may occur in the KNP but whose presence is not confirmed are recorded in brackets. The range of each species is described, in the Transvaal and Natal mentioning the number of quarter-degree squares in which the species has been recorded (out of 460 in the Transvaal and 169 in Natal), as well as the number of squares recorded in the Park. The breeding status of each species in the KNP is described. Comments on the habits or status that have bearing on the conservation of each species are included, although general conservation approaches are mentioned in the main text. When it is suggested that a species should be surveyed this means recording its detailed distribution, its basic biology and habitat requirements, and its population dynamics. Only then can conservation management of the species be planned. At present any comments on the abundance of a species are usually subjective. The nomenclature and systematic order follows McLachlan & Liversidge (1978).

Ostrich *Struthio camelus*

This species has not previously been designated as vulnerable. It is included here since the extent of contamination of the southern *S. c. australis* (considered a species by some) by the northern race introduced for breeding for feathers has not been determined (Liversidge 1978). The status and purity of the small breeding population in the KNP should be determined and special care exercised should introductions into the Park be considered. The distribution of the species is not detailed due to confusion with domestic and feral stock and uncertainty about the purity of various populations.

Pink-backed Pelican *Pelecanus rufescens*

A widespread vagrant to the Transvaal (six squares, one in the Park) where it is rare and not known to breed. Also known from Natal (15 squares) where it breeds, and from the eastern Cape Province.

White Pelican *Pelecanus onocrotalus*

A vagrant to the Transvaal (11 squares, two in the Park), also known

from Natal (19 squares) and the rest of South Africa. Not known to breed in the Transvaal.

Goliath Heron *Ardea goliath*

Only widespread in the eastern lowveld of the Transvaal (55 squares, 20 in the Park) and in Natal (28 squares), also occurring in the Orange Free State and Cape Province. Only common in the Transvaal lowveld and northern Natal and known to breed widely in the Park.

Rufous-bellied Heron *Ardeola rufiventris*

A rare vagrant to the Transvaal (12 squares, two in the Park), also known from north-western Natal (eight squares) and the eastern Cape Province. Known to breed in the Transvaal: not yet confirmed to breed in the Park but ideal habitat exists in the north during wet summers.

Dwarf Bittern *Ardeirallus sturmii*

Widespread in the Transvaal (27 squares, seven in the Park) but nowhere common, also known from Natal (3 squares) and the eastern Cape Province. This summer breeding visitor breeds in the Transvaal and Rhodesia adjacent to the Park. Probably breeds in the north of the Park during wet summers although this remains to be confirmed.

Little Bittern *Ixobrychus minutus*

Widely recorded in the Transvaal (32 squares, eight in the Park), and also in Natal (13 squares) and the rest of South Africa. There is an old breeding record for the Transvaal but no recent records or reports from the Park. Collections indicate that the non-breeding migrant *I. m. minutus* is much commoner than the resident breeding *I. m. payessii*, but the races are difficult to separate in the field.

White-backed Night Heron *Gorsachius leuconotus*

Widespread in the Transvaal (24 squares, five in the Park), also known from Natal (five squares) and in the eastern Cape Province. Within the Transvaal is only regularly found in the eastern lowveld. Known to breed in the Transvaal although not yet recorded in the Park.



Bittern *Botaurus stellaris*

Uncommon in the Transvaal (14 squares, four in the Park), also known from Natal (nine old records) and the rest of South Africa. Not recorded breeding in the Transvaal. The validity of the records of the KNP is questionable. The species prefers dense reed beds or extensive patches of flooded long grass, which habitats are lacking where the species has been reported.

Marabou *Leptoptilos crumeniferus*

Widespread in the Transvaal (38 squares, 21 in the Park), also known from north-eastern Natal (seven squares) with few records from the Orange Free State and Cape Province. Known to breed in Swaziland and there is a single breeding record from the Park. The status of the breeding population in relation to the extensive migrant and non-breeding segment needs to be determined.

Openbill *Anastomus lamelligerus*

Recorded in the Transvaal (20 squares, eight in the park) and north-eastern Natal (16 squares), with vagrants reported from the Orange Free State and Cape Province. Only known to breed in northern Natal and the extreme north of the Park (Newman & English 1975).

Saddlebill *Ephippiorhynchus senegalensis*

Virtually restricted to the Transvaal lowveld (36 squares, 24 in the Park), extending to north-eastern Natal (10 squares). Breeds widely in the KNP, which is surely the main breeding habitat of the species in South Africa.

Yellow-billed Stork *Mycteria ibis*

Recorded widely in the RSA, including the Park. The only breeding record in the Transvaal is from the central KNP (Newman *pers. comm.*).

Woolly-necked Stork *Ciconia episcopus*

Restricted to the Transvaal lowveld (22 squares, 16 in the Park) and north-eastern Natal (28 squares). Known to breed in the Park, which must provide the most extensive conserved habitat for the species in South Africa.

Black Stork *Ciconia nigra*

Recorded widely in South Africa, including the Transvaal (80 squares, 20 in the Park) and Natal (45 squares). It breeds widely, using regular cliff nest sites, including those in the Park.

White Stork *Ciconia ciconia*

Widespread as a summer migrant in South Africa, including the KNP, but only known to breed in the south-western Cape Province.

Greater Flamingo *Phoenicopterus ruber*

A vagrant to the Transvaal (43 squares, six in the Park) where it has not been found breeding. Occurs widely over the rest of South Africa including Natal (24 squares).

Pygmy Goose *Nettapus auritus*

A rare vagrant to the Transvaal (15 squares, six in the Park) and coastal Natal (31 squares). It has once been recorded breeding in Natal and Transvaal, but is a regular visitor to other suitable sites during summers of high rainfall, including the northern part of the Park. The species has not previously been designated as vulnerable but since it breeds here it would seem to qualify.

Cape Vulture *Gyps coprotheres*

Recorded widely in South Africa, including the KNP, this vulture has its main breeding colonies on cliffs in the Transvaal (Tarboton 1978). No colonies occur in the Park, but the nearest at Manoutsa may have birds that range to the Park to feed.

Lappet-faced Vulture *Torgos tracheliotus*

This species has not previously been designated as vulnerable. It has been recorded widely in the Transvaal (60 squares, 23 in the Park) and also occurs in north-eastern Natal (16 squares), Orange Free State and the northern Cape Province. It is probably now only common in the eastern Transvaal, north-eastern Natal and northern Cape Province. The KNP is probably a major breeding area for the species in South Africa, certainly in the Transvaal (Tarboton 1978).

White-headed Vulture *Trigonoceps occipitalis*

This species has not previously been designated as vulnerable. It is virtually restricted to the eastern lowveld in the Transvaal (34 squares, 23 in the Park), extends to north-eastern Natal (8 squares) and as a vagrant to the Orange Free State. The KNP must account for the major breeding habitat of the species in South Africa.

Hooded Vulture *Necrosyrtes monachus*

This species has not previously been designated as vulnerable. It is virtually restricted to the eastern lowveld of the Transvaal (34 squares, 26 in the Park), extending as a vagrant to north-eastern Natal (3 squares), Orange Free State and Cape Province. Only known to breed in the KNP in South Africa.

Egyptian Vulture *Neophron percnopterus*

The validity of the sight records from the Park are suspect, and the species is probably extinct within South Africa (Mundy 1978). It is possible that a small population exists in the interior of Transkei. It is unlikely that the KNP was the preferred habitat of the species when it did occur in South Africa.

Palm-nut Vulture *Gypohierax angolensis*

A rare vagrant to the Transvaal (four squares, one in the park), only resident in north-eastern Natal (10 squares) where limited breeding habitat exists.

Peregrine *Falco peregrinus*

Recorded widely in South Africa, including the Park, but most records cannot be ascribed to either the resident breeding race or the migrant nonbreeding race. Only 40-50 pairs are estimated to breed in the Transvaal (Tarboton 1978), some within the Park. Breeds regularly on favoured cliff nest sites.

African Hobby *Falco cuvieri*

A very rare species in the RSA known from the Transvaal (three squares, two in the Park), Natal (four old records) and the eastern Cape

Province. Not recorded breeding in South Africa but known to breed in south-eastern Zimbabwe and so may breed in the KNP if it does so anywhere in South Africa.

Red-necked Falcon *Falco chiquera*

Local in the Transvaal (14 squares, three in the Park), also known from Natal (one old record) and widespread in the northern Cape Province. Both the presence of the species and its breeding in the KNP require confirmation.

Dickinson's Kestrel *Falco dickinsoni*

Only known from the north-eastern Transvaal within South Africa (14 squares, nine in the Park), so that the KNP is vital for the conservation of the species within the country.

Pygmy Falcon *Polihierax semitorquatus*

This species is only confirmed for the northern Cape, Orange Free State and extreme south-western Transvaal in South Africa, where it breeds in the nests of the Sociable Weaver *Philetairus socius*. The species has been reported from several localities in the Transvaal, including the KNP, but none of these records have been confirmed by a photograph, specimen or good description. However, the species has been found in Mocambique (Clancey 1976) and so it might occur in the Transvaal lowveld. It may breed in the nests of the Buffalo Weaver *Bubalornis albirostris*, which is similar to its host in East Africa.

Bat Hawk *Macheirhamphus alcinus*

Widely recorded in the Transvaal (21 squares, six in the Park) and Natal (2 squares). This species is little known and has not been found breeding in the Park, but may be commoner than it appears.

Long-crested Eagle *Lophaetus occipitalis*

Only resident along the base of the eastern escarpment in the Transvaal (28 squares, five in the Park), extending widely into Natal (60 squares). It is only a vagrant to the KNP since there is no permanent marsh or forest habitat where it can breed.

Booted Eagle *Hieraaetus pennatus*

Widespread in the RSA, including the KNP, but only known to breed in the southern and eastern Cape Province.

Ayres' Hawk Eagle *Hieraaetus dubius*

An uncommon species in eastern South Africa, from where there are no authentic breeding records. Most records indicate that it is a summer visitor, but winter records deserve special attention to determine if they involve breeding birds. It has recently been found breeding in south-eastern Zimbabwe (Phillips 1978) and the north of the Park has similar habitat in which it might breed.

Martial Eagle *Polemaetus bellicosus*

Widespread in the Transvaal (156 squares, 33 in the Park), Natal (65 squares), Orange Free State and Cape Province. The species is showing some symptoms of a decline in the central Transvaal (Tarboton 1978). A breeding population of 103-110 pairs has been estimated for the Park (Kemp & Kemp 1974; Tarboton 1978).

African Fish Eagle *Haliaeetus vocifer*

Widespread in the Transvaal (122 squares, 26 in the Park), Natal (66 squares), Orange Free State and Cape Province. Breeds all over the Transvaal (Tarboton 1978), but the Park supports the main riparian breeding population.

Bateleur *Terathopius ecaudatus*

This species has undergone a considerable range reduction, from the eastern Cape Province (Vernon 1978), southern Natal, Orange Free State and central Transvaal. It is now only common in the Transvaal lowveld (93 squares, 33 in the KNP), north-eastern Natal (28 squares) and the northern Cape Province. A similar decline is suspected in Zimbabwe (Tree 1978). The KNP is an important conservation area for the large breeding population which it supports in South Africa.

Ovambo Sparrowhawk *Accipiter ovampensis*

This species is widespread in the central Transvaal but is uncommon in

the KNP (36 squares, five in the Park) and is not known to breed there. Not known from elsewhere in South Africa.

Black Sparrowhawk *Accipiter melanoleucus*

Widespread in eastern South Africa in the Transvaal (59 squares, eight in the Park), Natal (38 squares) and the Cape Province. It has not been established to breed in the Park.

Dark Chanting Goshawk *Melierax metabates*

Restricted to the lowveld in the Transvaal (65 squares, 30 in the Park), otherwise only occurring in north-eastern Natal (two squares) within South Africa. It breeds in the KNP, which must provide the main conserved habitat for the species in South Africa.

Crested Francolin *Francolinus sephaena*

Widespread in the Transvaal bushveld (144 squares, 31 in the Park) and northern Natal (34 squares). Breeds widely in the Transvaal, including the Park, and probably does not warrant vulnerable status.

(Blue Quail *Coturnix adansoni*)

An old specimen from adjacent to the KNP and a single sight record are the only evidence for the species in the Transvaal. A very rare bird in eastern South Africa.)

Crested Guineafowl *Guttera edouardi*

Restricted to the north-eastern and south-eastern Transvaal (22 squares, seven in the Park) and the northern half of Natal (20 squares) within South Africa. Breeds in the northern areas of the Park.

Hottentot Button-quail *Turnix hottentotta*

Restricted to the eastern Transvaal (13 squares, five in the Park), Natal (one square) and the eastern Cape Province. Breeds in the Park but is throughout rare and poorly known.

Lesser Gallinule *Porphyrio alleni*

Very local in the Transvaal (eight squares, two in the Park) which is the only area where it is known to breed in South Africa. Extends to Natal (one square) and the Orange Free State. Probably breeds in the north of the KNP during summers of high rainfall.

Finfoot *Podica senegalensis*

Widespread in the Transvaal (24 squares, six in the Park), coastal Natal (19 squares) and the eastern Cape Province. Not confirmed to breed in the Park.

Kori Bustard *Otis kori*

Used to be widespread in the RSA except for the eastern littoral. Now mainly in the Transvaal lowveld (45 squares, 20 in the Park) and the northern Cape Province, the Kruger and Kalahari Gemsbok National Parks probably supporting the majority of the South African population. Breeds in the Kruger National Park.

Stanley's Bustard *Otis denhami*

An uncommon vagrant to the Transvaal (21 squares, two in the Park) but probably does not breed there. Mainly occurs and breeds in Natal (46 squares) and the eastern Cape Province.

Black-bellied Korhaan *Eupodotis melanogaster*

Restricted to the Transvaal lowveld (40 squares, 24 in the Park) and northern Natal (35 squares) within South Africa. It prefers areas of long grass where it breeds in the KNP, which is probably a major conservation area for the species in South Africa.

Lesser Jacana *Microparra capensis*

A local summer visitor to the Transvaal (nine squares, two in the Park) and a winter visitor to Natal (12 squares). Not known to breed in South Africa although it might do so in the north of the Park. The records from the KNP require confirmation.

Lesser Black-winged Plover *Stephanibyx lugubris*

Widespread in the Transvaal lowveld (18 squares, 14 in the Park) and north-eastern Natal (8 squares). Does not appear to breed in the KNP, arriving in summer with flying immatures, although confirmation of breeding would make the KNP vital to the species within South Africa.

White-crowned Plover *Xiphidiopterus albiceps*

Restricted to large rivers in the Transvaal within South Africa (13 squares, six in the Park). Now virtually confined to the KNP due to degradation of riparian habitat elsewhere and known to breed there. A survey of the species in the Park indicates a population of about 90 pairs (Tarboton & Nel 1980).

Long-toed Plover *Hemiparra crassirostris*

A single record from the northern tip of the KNP is the only one from the Transvaal but the species is also known from north-eastern Natal (five squares) within South Africa. It is possible that the pans in the north of the Park provide breeding habitat during certain summers.

Red-winged Pratincole *Glareola pratincola*

A single record of a flock from the KNP is one of very few sight records in the Transvaal. Confusion with Black-winged Pratincole *G. nordmanni* is likely but neither species is known to breed in the Transvaal. *G. pratincola* is only regular in Natal (16 squares) where it breeds, sometimes also in Swaziland.

Mourning Dove *Streptopelia decipiens*

Only known from the KNP in the RSA, but for one site on the Limpopo River and an irruption that extended to the Nyl River area. This very local species must occur at very low population densities within South Africa and preferred habitat should be carefully preserved.

(Blue-spotted Wood Dove *Turtur afer*)

This species is only known to occur very locally just south of the Zoutpansberg within South Africa but it may extend eastwards to the extreme north of the Park.)



Brown-necked Parrot *Poicephalus robustus*

Recorded from Transvaal (12 squares, five in the Park), Natal (10 squares) and the eastern Cape Province within South Africa. Known to breed in the KNP, which is the only area that the species is at all common in the Transvaal.

Brown-headed Parrot *Poicephalus cryptoxanthus*

Restricted to the eastern Transvaal (38 squares, 24 in the Park) and north-eastern Natal (10 squares) within South Africa. Breeds widely within the Park.

African Cuckoo *Cuculus canorus gularis*

Probably a distinct species, this population of cuckoos is easily confused with the non-breeding migrant European Cuckoo *C. c. canorus*. The former is known to breed in the Transvaal (Tarboton 1975), but is otherwise a little known species.

Thick-billed Cuckoo *Pachycoccyx audeberti*

Only known from the eastern Transvaal (11 squares, six in the Park) within South Africa. Recently found breeding adjacent to the Park (P. Beaumont, *pers. comm.*).

Black Coucal *Centropus grillii*

A local summer visitor to the Transvaal lowveld (nine squares, six in the Park) and rarely to northern Natal (one square). Inhabits stands of long grass during wet summers and may breed in the south of the Park.

Senegal Coucal *Centropus senegalensis*

This species was originally reported from the KNP but there is no evidence of its occurrence within the RSA and the records must be rejected.

Grass Owl *Tyto capensis*

Local and uncommon in the KNP but widespread in the Transvaal (53

squares, four in the Park), Natal (36 squares) and the moister areas of the Orange Free State and Cape Province. Breeds widely in the Transvaal but is not known to breed in the Park.

Barred Owl *Glaucidium capense*

Restricted to the eastern Transvaal (16 squares, 11 in the Park), but for two old records from Natal. The KNP is obviously a vital area for the conservation of the species within South Africa, although the species has not been proved to breed in the country.

Fishing Owl *Scotopelia peli*

Restricted to the Transvaal (13 squares, eight in the Park) and north-eastern Natal (seven squares). Not established to breed in the KNP but this is probably a major conservation area for the species within South Africa.

Pennant-winged Nightjar *Macrodipteryx vexillaria*

A summer visitor to the Transvaal (10 squares, five in the Park) and northern Natal (two squares). Parts of the KNP may be the preferred habitat of the species although it has yet to be proved to breed in South Africa.

Mottled Spinetail *Telecanthura ussheri*

Only known from the north-eastern tip of the Transvaal within the RSA but for one record from the eastern Transvaal (Newman 1974). Not yet proved to breed in South Africa.

Boehm's Spinetail *Neafrapus boehmi*

Only known from the extreme north-eastern corner of the Transvaal, mainly in the KNP, where it is regularly seen and is likely to breed.

Woodland Kingfisher *Halcyon senegalensis*

Widespread in the Transvaal (98 squares, four in the Park) and north-eastern Natal (10 squares) where it breeds commonly during its summer visit. The species probably does not warrant vulnerable status.

Mangrove Kingfisher *Halcyon senegaloides*

Occurs in coastal Natal (eight squares), the only two records for the Transvaal being from the Park. It is probably only a rare vagrant and breeding in the KNP is not proved.

Grey-hooded Kingfisher *Halcyon leucocephala*

A widespread summer migrant in the Transvaal (35 squares, 10 in the Park), extending to extreme north-eastern Natal (3 squares). Breeds in the Transvaal and likely to do so in the Park.

Carmine Bee-eater *Merops nubicus*

A widespread summer visitor to the Transvaal, including the Park, but the species has not been established to have bred anywhere in South Africa.

Racquet-tailed Roller *Coracias spatulata*

Confined to the northern tip of the KNP within South Africa, but not yet confirmed to breed there. A vagrant has been recorded from Swaziland.

Purple Roller *Coracias naevia*

Widespread in the Transvaal (98 squares, 30 in the Park), north-eastern Natal (seven squares) and the Orange Free State. Breeds widely in the Park but appears to fluctuate in numbers.

Broad-billed Roller *Eurystomus glaucurus*

A summer breeding migrant to the northern Transvaal (17 squares, seven in the Park) and north-eastern Natal (11 squares). A considerable part of the South African population probably breeds in the Park.

Ground Hornbill *Bucorvus leadbeateri*

Has shown a considerable range retraction in the Transvaal (52 squares, 30 in the Park), also found in Natal (58 squares) and the eastern Cape Province. The population in the Park has been estimated at 717 individuals (Kemp & Kemp 1974), and it is being regularly monitored.

(White-eared Barbet *Buccanodon leucotis*

Widespread in coastal Natal north of Durban (28 squares), the only record for the Transvaal being from the KNP and requiring confirmation.)

(Broadbill *Smithornis capensis*

The only record for the Transvaal comes from west of the KNP and the species may be found in the extreme north of the Park. Elsewhere in the RSA it is restricted to north-eastern Natal (nine squares), but for isolated populations near Durban (J. Mendelsohn *pers. comm.*) and in the Oribi Gorge.)

Mosque Swallow *Cecropis senegalensis*

Restricted to the Transvaal lowveld within the RSA (17 squares, all in the Park). Known to breed in the Park, which is obviously vital for the species within the country.

House Martin *Delichon urbica*

Widespread as a migrant in the Transvaal although it does not breed there.

White-breasted Cuckoo-shrike *Coracina pectoralis*

Only recorded from the northern Transvaal lowveld in South Africa (15 squares, seven in the Park) and is known to breed in the Park (K. Newman *pers. comm.*).

African Golden Oriole *Oriolus auratus*

Restricted to the Transvaal in South Africa (20 squares, 11 in the Park) but has not been confirmed to breed there. The species is poorly known.

Grey Penduline Tit *Anthoscopus caroli*

Restricted to the Transvaal (31 squares, 16 in the Park) and northern Natal (24 squares). Known to breed in the Transvaal, including the Park.

Spotted Creeper *Salpornis spilonota*

Known in South Africa from a single sight record in the Park. The habitat is atypical for the species and it is far from its known range so that the record should be rejected.

Annot's Chat *Myrmecocichla arnoti*

Restricted to the northern Transvaal within the RSA (14 squares, 10 in the Park). Probably breeds in the KNP which is an important conservation area for the species within South Africa.

Stierling's Barred Warbler *Camaroptera stierlingi*

Restricted to the Transvaal (17 squares, 12 in the Park) and northeastern Natal (10 squares). It is resident and breeds in the Park.

Wattle-eyed Flycatcher *Platysteira peltata*

Recorded mainly along the Limpopo River in the Transvaal, including up the Levubu River at its confluence (six squares, three in the Park). Also known from the Komati River to the south, with an old record from the Olifants River within the Park. Occurs in coastal Natal north of Durban (13 squares). Confined to stands of large trees with tangled creepers and undergrowth, hence very sensitive to habitat alteration as has been undertaken along the Olifants River.

Black-fronted Bush Shrike *Chlorophoneus nigrifrons*

Reported from the north of the Park. These are probably misidentifications since the species is confined to the canopy of moist evergreen montane forest.

Yellow-spotted Nicator *Nicator gularis*

In the Transvaal restricted to gorges in the Lebombo Mountains but for records along the lower Limpopo and Komati Rivers (six squares, five in the Park). More widespread in north-eastern Natal (27 squares). No longer occurs in the Nwanedzi Gorge due to habitat alteration, to which it will be sensitive.

Long-tailed Glossy Starling *Lamprotornis mevesii*

Confined to the alluvial flats along the Limpopo and Levubu Rivers in South Africa (21 squares, seven in the Park). Breeds and is only common in the Park.

Yellow-billed Oxpecker *Buphagus africanus*

The species is extinct in the RSA and was reliably reported in the KNP at the end of the last century. A recent sighting of the species in the Park (S. C. J. Joubert *in litt.*) would be very exciting if confirmed. Availability of food and suitable host animals in the KNP indicate that the species could exist there (Stutterheim *in litt.*) and the only course open seems to be to reintroduce the species. This is the only extinct vertebrate, known to have been widespread and common in South Africa, for which no conservation action has been taken.

Purple-banded Sunbird *Cinnyris bifasciatus*

Only known in the Transvaal from sightings in the KNP that require confirmation. Occurs in coastal Natal north of Durban (29 squares).

Yellow-bellied Sunbird *Cinnyris venustus*

Only known from the Park within South Africa, the records should be confirmed.

(Blue-throated Sunbird *Anthreptes reichnowi*

Reported from Tzaneen in the Transvaal, including breeding, and may be found in the north of the Park.)

Yellow-White-eye *Zosterops senegalensis*

A single specimen from the Limpopo River adjacent to the Park is the only definite record for the Transvaal, also occurs in north-eastern Natal (16 squares). Records for this species from the north of the KNP may be valid but confusion with yellow races of *Z. pallidus* has muddled the picture.

Cut-throat Finch *Amadina fasciata*

Recorded widely in the Transvaal (50 squares, 10 in the Park), extend-

ing to the northern Orange Free State. Known to breed in the Park (H. Mockford *pers. comm.*).

Pied Mannikin *Lonchura fringilloides*

Only recorded twice in the south-eastern Transvaal, once in the KNP, and also found in Natal (three squares). Suspected to breed near Nelspruit close to the Park, but only a visitor during summers of high rainfall.

Green Twinspot *Hypargos nitidulus*

Recorded in the eastern and northern Transvaal (15 squares, one in the Park) and in Natal (35 squares). May be found to be more widespread in the KNP if properly surveyed.

(Golden-backed Pytilia *Pytilia afra*

Only known from three Transvaal localities in the RSA, one adjacent to the Park at Komatipoort.)

Red-throated Twinspot *Hypargos niveoguttatus*

Recently recorded in the north of the KNP (K. Newman *pers. comm.*) as the first record for South Africa, suggesting that the species may be vulnerable within South Africa due to limited range. Another twinspot, possibly the Pink-throated Twinspot *H. marginatus*, has been reported from Komatipoort adjacent to the Park. Proper surveys would elaborate the status of either species.

(Grey Waxbill *Estrilda perreini*

Reported from the Transvaal escarpment and adjacent Mocambique, as well as near Crocodile Bridge on the border of the Park (D. Day *pers. comm.*). Common in coastal Natal (30 squares)).

(Broad-tailed Paradise Whydah *Steganura orientalis*

Recorded once in the Transvaal, and since it parasitises the Golden-backed Pytilia it may be more widespread).

(Lemon-breasted Canary *Serinus citrinpectus*

Only known from one locality within the RSA in Natal but occurs in Mocambique adjacent to the Park).