

# Birds at the KMP – a Guide

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This guide is intended for visitors to the Kalahari Meerkat Project who wish to have some more background about birds that live on the project's land. The content is derived from various online sources cited in each section. It may be that they do not represent the latest findings on the species' biology or ecology, but will give a fairly good overview over the species.

Guide books are available at both farm houses, on request. Please do not hesitate to ask the researchers if you wish to learn more about a certain species, especially if it is researched at the project (e.g. yellow-billed hornbills, crimson-breasted shrikes).

## 1. Lappet-faced vulture (*Torgos tracheliotos*)



### Facts

Wingspan: c. 280 cm (3)

Length: 78 - 115 cm (2)

Weight 4400 – 8500 g (3)

Status: Classified as Vulnerable (VU) on the IUCN Red List 2007 (1), and listed on Appendix II of CITES (4) and Appendix II of the Convention on Migratory Species (2).

**Description:** As the largest vulture in Africa (2), the lappet-faced vulture dominates other vultures when

feeding and is even powerful enough to fend off a jackal (5)! This impressive species is armed with a large and powerful beak (6), capable of tearing off the hides, tendons and other coarse tissue of its scavenged prey that are too tough for smaller scavengers (7). This enormous, broad-winged bird is easily recognised by its conspicuous size, bare, pink-skinned head and distinctive fleshy folds of skin, known as lappets, on the sides of its neck, for which it earns its common name (7) (8). There are two subspecies of the lappet-faced vulture. The African subspecies *Torgos tracheliotus tracheliotus* has mostly dark brown to black feathers (8), which contrast starkly with the white thighs and white bar running across the leading edge of the underwing, clearly visible when in flight (2). The north-east African subspecies, *Torgos tracheliotus negevensis*, is altogether browner, including partially-brown thighs, with only some individuals showing white on the underwing, and those individuals formerly found in Israel also having pure white feathers on their backs (9).

**Range:** Distributed across the Middle East and Africa, where the bird is found from the southern Sahara to the Sahel (9), down through east Africa to central and northern South Africa. In Africa, this vulture breeds in Egypt, possibly Libya, Senegal, Niger, Mauritania, Mali, Burkina Faso, Chad, Sudan, Ethiopia, Somalia, Democratic Republic of Congo, Rwanda, Kenya, Tanzania, Zambia, Malawi, Mozambique, Namibia, Botswana, Zimbabwe, South Africa (2). Breeding populations have been extinct in Morocco, Algeria and Tunisia since the 1930s (2), and it may also no longer breed in Swaziland (10). In the Middle East, the bird breeds in Saudi Arabia, United Arab Emirates, Oman and Yemen (2). The species no longer breeds in Israel, but it is known to sometimes travel up to 150 kilometres away from the breeding area to forage, and thus individuals that are thought to breed in Saudi Arabia can be found in Israel (2) (9).

**Habitat:** Over much of its range, the lappet-faced vulture inhabits dry savannah, semi-arid or desert areas with only scattered trees, thorn bushes and short grass, as well as open mountain slopes up to 4,500 metres above sea level (2) (9). Although open habitat is ideal for foraging, trees are also of critical importance, because they are used for roosting and nesting, with thorny species of *Acacia*, *Balanites* and *Terminalia* preferred (9).

**Biology:** The lappet-faced vulture is primarily a scavenger, preferring to feed on the carcasses of smaller animals such as gazelle and hares (2) (7). Unusually for vultures, however, this species also occasionally hunts and kills live prey, including small mammals and birds such as flamingos, in addition to feeding opportunistically on eggs, and possibly termites and locusts (6) (11). Although normally found alone or in pairs, these birds will sometimes congregate around large food sources or water holes, with up to 50 individuals seen in exceptional cases, although groups do not usually exceed ten (9). Being much more powerful and aggressive than other vulture species, and of dominating size, the lappet-faced vulture will often scare off or steal from smaller vultures (7) (9).

When mating, pairs often build only one nest, although it is also normal to have one to three nests that are used alternately, and these nests are used year after year. The breeding season varies across this bird's extensive range. Generally, those in East Africa breed throughout the year (9), while those in southern Africa probably mate in May, and breed from May until mid-summer when the chicks fledge (10), and those in the extreme north of the range mate from November to July (sometimes to September). One egg per clutch is usual, which is then incubated for 54 to 56 days by both parents (9). Although the chick fledges at 125 to 135 days, they continue to remain dependent on their parents for quite some time (5) (9). Despite being independent from their parents, young usually take six years before they will begin to breed themselves (9).

**Threats:** The remaining small and declining population of lappet-faced vultures is suffering from a variety of threats across its range, but owes its demise particularly to poisoning and persecution. Widespread accidental poisoning has occurred through these birds feeding on bait treated with strychnine and other poisons that are intended for mammalian predators, left out by farmers in order to protect their livestock. However, this vulture has also often been mistakenly accused of preying on livestock itself, and consequently persecuted by farmers. One particularly devastating deliberate poisoning incident killed 86 lappet-faced vultures in Namibia (2). A rising scarcity of large carcasses on which to feed may also be a problem (9). Additionally, this species is particularly sensitive to nest disturbance, which may sadly be growing with increasing road construction and recreational use of off-road vehicles (2). Like other bird species, this vulture has been known to fall victim to electrocution by high-voltage pylons and power lines (5). As a result of such threats, many local populations are gradually becoming extinct.

**Conservation:** The lappet-faced vulture breeds in a number of protected areas within its extensive range, and ongoing ecological research is being conducted, particularly on the *T. t. negevensis* subspecies in Saudi Arabia and on *T. t. tracheliotos* in southern Africa. There is an urgent need to raise awareness amongst farmers of the plight of this species and the decimating effects both persecution and accidental poisoning are having (2). Thus, farmer-awareness programmes are one of the key initiatives proposed in the action plan for this species, which was created in 2005, along with ongoing research and an awareness campaign to reduce nest disturbance (9). International cooperation and concerted conservation effort will be required if further localised extinctions are to be prevented, a fate sadly already realised in a number of North African countries and Israel.

**Source:** ARKive, <http://www.arkive.org/lappet-faced-vulture/torgos-tracheliotos/info.html>

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## 2. White-backed vulture (*Gyps africanus*, African white-backed vulture)



### Facts

Length: 94 cm (2)

Wingspan: 218 cm (2)

Weight: 4150 – 7200 g (2)

Status: Classified as Near Threatened (NT) on the IUCN Red List 2007 (1), and listed on Appendix II of CITES (3).

**Description:** This is Africa's most common large vulture (4), an accomplished scavenger that feeds on the carcasses of Africa's large animals. Its plumage is

dark brown with black skin on the neck and head, making the white lower-back, for which it is named, even more prominent (2). The white-backed vulture has black eyes and a strong, slightly hooked black bill, contrasting with its pale crown and hindneck (4). As they age, the plumage of white-backed vultures becomes paler and plainer, especially the female's; conversely, juveniles are darker, with lighter brown streaks on their feathers (2).

**Range:** Ranges from Mauritania, east to Ethiopia, and south through East Africa to South Africa (2)

**Habitat:** The white-backed vulture inhabits open savanna and wooded country with game animals and livestock, up to 3,000 metres above sea level (2) (5).

**Biology:** White-backed vultures are scavengers, feeding on the soft muscle, organ tissue and bone fragments of large carcasses (2). With their large, broad wings they can soar and circle for hours as they search for carrion (6), sometimes following ungulates as they undertake their regular migrations (5). Their excellent eyesight enables them to spot food from high in the air, and they also keep an eye on other vultures, quickly following if they see another making a sudden descent (6). Up to 200 white-backed vultures can gather at a carcass; an enormous elephant carcass may even attract a thousand (2). With so many birds trying to feed, fights are inevitable (4). Accompanied with grunts and goose-like hisses and cackles (4), the scrum of vultures can be seen inserting their long, bare necks under the skin of the carcass or crawling into the ribcage as they feed on the dead remains (2). After gorging themselves, the vultures may bathe together with other species at a favourite site, or rest with their wings spread and backs to the sun (4).

White-backed vultures breed at the start of the dry season, nesting in loose colonies of 2 to 13 birds. The nest is a platform of sticks, lined with grass and green leaves, situated in the crown or fork of a large tree. Generally a single egg is laid, which is incubated for 56 days. The pale grey chick is fed by both parents until they fledge at 120 to 130 days of age (2).

**Threats:** The white-backed vulture has been impacted by a number of threats, resulting in a decline in numbers in recent years. Consequently, in 2007 the IUCN Red List uplisted the species from Least Concern to Near Threatened (1). These population declines have been caused by a combination of factors: the loss and conversion of the vulture's habitat for agriculture, declines in wild ungulate populations reducing the availability of carrion, hunting for use in traditional medicine, capture for the illegal live trade (7), electrocution on electricity pylons, drowning in farm reservoirs (8), persecution and poisoning (7).

**Conservation:** A number of protected areas in Africa hold populations of white-backed vultures, including Serengeti National Park in Tanzania, a World Heritage Site (9). Yet the recent declines are worrying and further action is clearly required. Recommended measures include establishing legal protection for the species in all range countries, establishing a vulture monitoring network, and determining the most significant threats and seeking solutions (7).

**Source:** ARKive, <http://www.arkive.org/white-backed-vulture/gyps-africanus/info.html>

### 3. Tawny eagle (*Aquila rapax*)



#### Facts

Length: 65 – 75 cm (2)

Status: Classified as Least Concern (LC) on the IUCN Red List (1) and listed on Appendix II of CITES (3).

**Description:** Common and widespread, the tawny eagle is a relatively large, handsome bird of prey, with heavily feathered legs (4) (5). The plumage is generally tawny to rusty brown in colour, often with dark markings on the wings, especially the flight-feathers (2) (4). Three subspecies are currently recognised, which occupy different geographical regions, and vary slightly in size, markings and colouration (2). During its first year, the immature tawny eagle's plumage is much paler than the adults, often whitish, especially on the underparts (2) (4).

**Range:** There are two African tawny eagle subspecies, *Aquila rapax rapax*, which can be found throughout southern Africa, as well as south-eastern parts of Central Africa, and *Aquila rapax belisarius*, which is found in Morocco, Algeria, much of tropical Africa between the Sahara and the equator, and also southern Arabia. In Asia, the subspecies *Aquila rapax vindhiana* occupies much of India, Pakistan and southern Nepal as well as parts of Myanmar and Vietnam (1) (2).

**Habitat:** Throughout its wide range the tawny eagle may be found in a variety of habitats, but principally open savanna and arid steppe. It is absent from forests and areas of true desert (2).

**Biology:** The tawny eagle is most frequently seen soaring high in the air or perched at the top of a tree, scanning the ground for prey (6). A formidable hunter, the tawny eagle will tackle mammals as large as hares, as well as sizeable birds and lizards, which it catches by making a rapid dive from its perch or during flight, seizing the animal in its powerful talons. When available, this species will also exploit a variety of other food sources such as carrion, insects, amphibians and fish, and frequently steals food from other birds, such as storks, raptors and ground-hornbills (2). The tawny eagle's breeding season varies according to location, but most commonly occurs in the dry season (2). Courtship consists of aerial displays, during which this normally silent species makes a series of noisy croaks and grunts (7). After mating, a large, flat nest is constructed from sticks lined with grass and leaves, usually at the top of a thorny tree or very occasionally on a power pylon (2) (6). A clutch of two eggs is laid, which hatch after around 39 to 44 days. During the early stages of the 77 to 84 day fledging period, while the chicks are still small, the eldest chick may kill the younger sibling (2) (8). A single nest may be used repeatedly for many years, so long as the crown of the tree remains unaltered (8). Tawny eagles have a relatively long lifespan, reaching up to 16 years (5).

**Conservation:** There are currently no specific conservation measures in place for the tawny eagle (1). Throughout its extensive range this species can be found in a number of protected areas, including several large national parks such as Kruger National Park in South Africa (2).

**Source:** ARKive, <http://www.arkive.org/tawny-eagle/aquila-rapax/>

### 4. Martial Eagle (*Polemaetus bellicosus*)



Juvenile

**Distribution and abundance:** This species is a widespread but uncommon Afrotropical species found from the Sahel south to the Cape Province of South Africa (del Hoyo et al. 1994). It is locally common only in protected areas where nesting trees occur (Boshoff 1997), but it avoids dense forest habitat (Steyn 1982). It occurs right across southern Africa with concentrations in Kruger NP, and the Kalakgadi Trans Frontier Park of South Africa, and the Chobe NP, Botswana (Boshoff 1997). In Namibia it is thinly spread throughout the country, with gaps only in the Namib sand sea and some central-south farmlands where small-stock farming occurs (Brown 1991). Population concentrations occur in Etosha NP and communal land to the west, Bushmanland (Tsumkwe District) in the east, and central Namibian farmland (Brown 1991, Boshoff 1997). The global (African) population is un-estimated but in southern Africa the highest density populations occur on rich basalt soils in Hwange NP, Zimbabwe with nesting prs 10.0 km apart. In the Kruger NP and surrounding conservation areas, pr are 11.0 km apart, and in central Namibia they are spaced 18.9 km apart in farmland (Tarboton & Allan 1984, Hustler & Howells 1990, Brown 1991, Boshoff 1993). In the Karoo, eagle densities are known to be highest (prs 7 km part) where farms are stocked with indigenous ungulates (as opposed to livestock) and primary productivity is lower (Machange et al. MS).

Two density estimates of breeding pr are available for Namibia, one inside a conservation area and one outside. In central farmland three breeding pr were found in 840 km<sup>2</sup> giving a breeding density of 3.6 pr/1,000 km<sup>2</sup> (Brown 1991). In the 22,700 km<sup>2</sup> Etosha NP T. Osborne (in litt) estimated 13 pr (1 Namutoni Sandveld, 1 south of Namutoni, 3 on the s border of the Park, 1 in Goas, 1 at Homob, 1 at Olifantsbad, 1 Leeubron-

Sprokieswood area, 1 Arendsnes, 1 Nomab area, 1 Rateldraf, 1 Kaross). This gives a lower density of 0.6 pr/1,000 km<sup>2</sup> (T Osborne unpubl), but populations have not been systematically studied, and large areas of Etosha are tree-less and unsuitable for nesting. Based on the size of the South African population which is estimated at less than 600 pr (Barnes 2000), the Namibian population with similar to lower breeding densities across an area approximately 60% the size of South Africa is estimated at less than 350 pr.

**Ecology:** Martial Eagles inhabit a wide range of habitats including open grassland where large trees occur, and scrubby Karoo areas to wooded savanna. In modern times it has become more common in otherwise tree-less habitat such as the Nama Karoo where it nests on pylons (Boshoff 1993, Machange et al. MS). This has yet to be reported in Namibia. It avoids closed-canopy forests and hyper-arid desert but it penetrates the Namib along suitable major ephemeral rivers that flow intermittently and harbour large trees (Boshoff 1997). It is not generally found in montane areas (Steyn 1982). The diet is mainly medium-sized mammals especially hares and mongooses (63% of 403 prey) with only 8% small stock (mostly scavenged) even in areas dominated by small stock (Boshoff & Palmer 1980). In n-e S Africa, however, birds dominate the diet (45%), especially game birds, with reptiles (38%) and mammals (17%) forming a smaller proportion than in Nama Karoo habitats (Tarboton & Allan 1984, Boshoff et al. 1990). Diet is unknown in Namibia but is probably similar to the mammal-dominated diet of the Nama-Karoo study. Adults are generally sedentary and are found in the vicinity of their large tree-nests year-round (Brown et al. 1982, Steyn 1982, Herholdt & Mendelsohn 1995). In Namibia and in the Nama-Karoo areas of South Africa (Boshoff et al. 1990) Martial Eagles generally begin breeding in winter with Namibian records from Apr (2), May (4), Jul (2), and Aug (2) (Jarvis et al. 2001). Clutch size recorded in Namibia is invariably 1 egg (n = 7) and thus 1 young is the only recorded brood size (17 nests) but success is more difficult to gauge. In the only study Brown (1991) followed 3 prs over a 6 yr period and pairs laid on average every other year (6 eggs over 13 pr-yrs) and fledged 5 young in 6 attempts (83% success or 0.38 young/pr/yr). Only 3 young reached independence giving a lower success of 0.23 young/pr/yr - all from the same pair. From other nests in the Nest Record Scheme where young were monitored for more than 2 months, success is estimated also at 5 of 6 attempts or 83% (Jarvis et al. 2001).

**Threats:** Suffers direct persecution through shooting and drowning in farm reservoirs (Steyn 1982, Brown 1991, Anderson et al. 1999). In one study of a small breeding population of Martial Eagles in central Namibia, 3 breeding pr were reduced to 1 breeding pr over a 6-yr period: 4 adults were found shot and another drowned in a farm reservoir. Assuming all nests found in the 840 km<sup>2</sup> study area were used at one time, the population probably numbered 5 breeding pr and the decline was, at 80%, even steeper than originally recorded. Elsewhere it suffers from some poisoning in South Africa so it is likely that the Namibian population also suffers to some extent. This was recorded for Namibia's oldest ringed bird and its probable mate (below) near Ondangwa, in n c Namibia (Greenwell unpubl). A more surprising threat is that of drowning in sheer-walled reservoirs. In southern Africa Martial Eagles ranked highest of all eagles as victims of drowning: of 65 eagles found dead in reservoirs, 38% were Martial Eagles (Anderson et al. 1999). These deaths were especially prevalent in more arid parts of South Africa, where an estimated 8% of the adult population may succumb to drowning (Anderson et al. 1999). This link with aridity suggests that drownings in Namibia may be more prevalent than recorded. Some mortality is associated with collisions with power lines (van Rooyen 1999): 10 birds were reported killed under powerlines by Eskom (S African supply company) in the 4 yr period from 1996-1999 (van Rooyen 1999); another 2 collided with the lines in the same period. The numbers killed in Namibia are unknown.

A further threat that may have a wider impact on Martial Eagle populations than the obvious mortalities uncovered in Brown's (1991) farmland studies is a general decline in suitable eagle prey which limits populations (A Jenkins pers comm.). This may be reflected in the larger than predicted territories of > 1,000 km<sup>2</sup> uncovered by van Zyl (1992) and the commonly reported result of higher population densities of eagles in areas where natural prey assemblages are intact (Kruger and Hwange NPs : Tarboton & Allan 1984, Hustler & Howells 1990). This may also explain the greater eagle densities in game farms in the Nama-Karoo where large ungulates have been re-introduced compared with small stock farming areas outside (Machange et al. MS). The adult turnover in each area is needed to explain if the higher density areas are indeed source as opposed to sink populations.

Recovery from persecution will be low without immigration for several reasons - the small clutch size, the rather low breeding success varying between 0.23 young/pr/yr (Brown 1991), and 0.29 young/pr/yr in the Kgadikgadi Transfrontier Park (Herholdt & Mendelsohn 1995) to the 0.58 young/pair/yr in Nama Karoo (Boshoff 1993), and the fact that Namibian and South African birds fail to lay eggs in 66%, 50% and 38% of nests prepared (Tarboton & Allan 1984, Brown 1991, T Osborne in litt). This is peculiar to all large species but the loss of long-lived adults (oldest ringed Namibian bird 22 yr old and found poisoned: S Braine unpubl data) is a significant blow to a slowly breeding species.

**Conservation status:** This species is classified as Endangered because in central parts of their range they have declined by as much as 80% in little over 5 years through direct persecution (Brown 1991). Given that this occurred in commercial farmlands (Brown 1991) and at least 50% of Namibia's Martial Eagles are estimated to occur on commercial farmland (Boshoff 1997, Mendelsohn et al. 2002), it is likely that populations elsewhere have suffered the same declines. This is supported by the lack of recruitment into populations that have lost adults due to poisoning (Brown 1991). The small population estimated at less than 350 pr (or about 1000 individuals) also places this species in the Endangered category. While it is not classed as globally threatened because of its widespread distribution (Stattersfield & Capper 2000), it is classed as Vulnerable in South Africa where it may have lost 20% of its population in the last three generations (Barnes 2000).

**Actions:** Education of farmers, especially in the small-stock farming community is a priority, given the large number of Martial Eagles that die directly at the hand of man. There is little doubt that Martial Eagles do take domestic stock but studies have shown that most items are probably scavenged and form a minor proportion of all prey (Boshoff & Palmer 1980). Some adult pr tend to be much more successful than other pairs (Brown 1991), and there is strong fidelity to nest sites (Herholdt & Mendelsohn 1995). Thus highly successful (source) nests should be identified and directly protected as they are likely to add significantly to the recruitment of pairs elsewhere where breeding is less successful (sinks). Since persecution may be limiting their population size in Namibia, education and direct protection are two important aspects of conservation. Covering of farm reservoirs in arid areas will also reduce the number of birds drowning in arid areas of southern Africa (Anderson et al. 1999). Finally and most important, additional research on important population processes such as adult survival and turnover, and the breeding frequency and success of colour marked birds (well) inside and outside protected areas should be undertaken. This will determine if protected areas remain sources for Martial Eagles in Namibia, and help differentiate between (i) degraded habitat (and low prey base) or (ii) direct mortality through persecution as the reasons for a lack of recruitment and reduced populations in Namibia. These ideas are important because a low level of persecution can be sustained by an otherwise healthy population where prey and nest sites are abundant as in certain Black Eagle populations in the Karoo that are heavily persecuted (R Davies pers comm.).

**Source:** Raptors Namibia website, [http://www.nnf.org.na/RAPTORS/raptors\\_pges/martialeagle.htm](http://www.nnf.org.na/RAPTORS/raptors_pges/martialeagle.htm)



## 5. Bateleur (*Terathopius ecaudatus*)



**Distribution and abundance:** This species is widely distributed across West and East African woodland savannas, absent from tropical rainforests and appears again in central-s Africa, but is largely absent from South Africa except for its northern parks (Tarboton & Allan 1984, del Hoyo et al. 1994, Simmons 1997). It requires very large territories (Tarboton & Allan 1984, Watson 1986), so it is nowhere abundant. From historical records from the 1900s it is clear that this unmistakable species has undergone massive range reductions in South Africa (Boshoff et al. 1983), shrinking into large protected areas such as Kruger

Park and the Kalagadi Trans Frontier Park (KTFP) (Watson 1988, 1990). Estimates of the previous South Africa population size have been made of 2500 prs (Boshoff et al. 1983, Steyn 1982), a figure that now stands at 600 prs for the former Transvaal (Tarboton & Allan 1984), 22 prs for the KTFP (Herholdt & de Villiers 1991) and 8-10 pairs outside it (Anderson 2000a). This represents a 75% reduction in numbers, suggesting similar reductions in numbers in Namibia because of similar threats (see below). Populations in s Mozambique number c >1,600 birds (Parker 1999). No density estimates are available for Namibia but reporting rates from bird atlas data in Etosha NP are similar to the Kruger NP (<50%), suggesting similar densities, including adjacent conservation areas (Simmons 1997). There nesting density varies from 2.2 -3.3 prs/100 km<sup>2</sup> (Tarboton & Allan 1984, Watson 1990, Simmons 1994). Outside these areas density drops to c 0.2 -1.0 pr/100 km<sup>2</sup> in unprotected areas (Tarboton & Allan 1984).

In Namibia it is absent from the south and west, thinly spread in central-east farmlands, relatively common in Etosha and former Ovambo, and most common in the wetter Kalahari broad-leaved woodlands of the Caprivi (Simmons 1997). The area of occupancy in Namibia is 34,049 km<sup>2</sup> in protected areas and 224,425 km<sup>2</sup> in unprotected areas (Jarvis et al. 2001). An approximate population figure using the minimum densities derived from protected (2.2 prs/100 km<sup>2</sup>) and unprotected areas (0.2 prs/100 km<sup>2</sup>) in South Africa projected over these areas of occupancy, gives 680 prs in protected areas and 450 prs in unprotected areas of Namibia. The total population is 1,130 prs or about 3 000 birds. They are almost certainly declining given the level of poison abuse in Namibia (Komen 2002), and the high rate of scavenging vultures poisoned (mean 21/yr in the 7 yr period 1995-2001: Bridgeford & Simmons unpubl data).

**Ecology:** Found in open and closed-canopy savanna woodlands, including Acacia savanna, Mopane and miombo woodland (Brown et al. 1982, Steyn 1982, Tarboton & Allan 1984); commonest in broad-leaved woodland in Okavango Delta where reporting rate are > 60% (Simmons 1997). Rarely occurs in heavily forested, mountainous or largely treeless habitats (Tarboton & Allan 1984). In Namibia found most often over tall woodland near drainage lines and dry rivers in Caprivi and within the more arid Etosha NP (Simmons 1997).

Feeds on a variety of prey including mammals, birds and reptiles. It kills and scavenges during long distance foraging, and its ability to locate very small pieces of carrion makes it highly susceptible to poison-laced carcasses (Brown et al. 1982, Tarboton & Allan 1984, Watson 1988). Also pirates prey from other species (Watson & Watson 1987).

This eagle is a solitary, tree-nesting, species with a very large home range of 21-40 km<sup>2</sup> (Tarboton & Allan 1984). Nest densities are unknown in Namibia but average c 5 km apart in the densest nesting areas in ne South Africa (Tarboton 2001), and 13-16 km apart in Zimbabwe (Steyn 1982). Egg-laying records for Namibia are sparse but laying occurs virtually year-round from Jan (1), Feb (1), March (1), April (1), July (1), Nov (1), December (2) (Brown & Clinning unpubl data). The rate of success in Namibia is unknown but averages 0.47 - 0.58 y/pr/yr in protected areas in South Africa (Watson 1986, Tarboton & Allan 1984), and 0.81 y/pr/yr at 4 nests in Zimbabwe (Steyn 1982).

**Threats:** Suffers direct persecution through poisoning at both large and small carcasses (Watson 1986). Because it forages over wide areas it covers many farms and thus it is at risk from even a small proportion of farmers who use poisons in Namibia (Brown 1991) and South Africa (Davies 1988). Birds occur outside protected areas in central and northern farming areas and communal lands, probably because these hold fewer small stock farmers who lay poison baits for mammalian carnivores (Brown 1986). Farmers frequently use poisons on the edge of conservation areas such as Etosha NP (Komen 2002) regularly killing vultures there (Bridgeford & Simmons unpubl data, T Osborne unpubl data). While Bateleurs are not recorded they almost certainly succumb as young birds disperse from these "safe" breeding areas. Poisoned Bateleurs are found within other protected areas in South Africa (Herholdt et al. 1996).

Breeding pairs are more often unsuccessful than successful due to predation and human interference (Watson 1988) including sensitivity to desertion at the egg stage (Steyn 1982). While traditional healers use vulture parts in Namibia there are no current records of Bateleurs being caught and killed (Hengari 2002). Some birds are trapped for use by traditional healers in S Africa because feathers are used for predicting future events (R Watson, P Steyn unpubl data).

Poisons may not account for all reductions in population density. This is apparent from the highest densities occurring in protected areas with intact wildlife populations, despite poisons not being used in the surrounding regions (e.g. Okavango Delta and Chobe NP: Simmons 1997). This suggests that the removal of large ungulates from cattle farming areas, reduces food available for Bateleurs, especially carrion for young birds (Steyn 1982, see also Martial Eagle), ultimately reducing their numbers. Habitat destruction and pesticides (DDT residues) have also been suggested as reasons for reductions (Steyn 1982) but DDT residues found in eggs are too low to account for the population declines (Watson 1986), and there is limited evidence for habitat destruction per se.

**Conservation status:** This species is classified as Endangered because of a suspected decline of at least 50% in the last 3 generations (~30 yr). This rate is based on two comparisons (i) the feeding-ecology similarity of this species with the Tawny Eagle, which in central Namibian farmlands declined by 71% (7 prs to 2 prs) in just 6 years (Brown 1991). These two species are more susceptible to poisons than any other raptors (Steyn 1982, Tarboton & Allan 1984, Watson 1986); (ii) the decline in Bateleurs in South Africa which was estimated at 75% over the last few decades (above). As a long-lived species, rarely laying 1 egg every year (Watson 1986), the Bateleur like other slow-maturing, slow-breeding species is unlikely to recover quickly from depressed adult populations.

It is not classified as globally threatened (Stattersfield & Capper 2000), but in South Africa it is classified as Vulnerable because it is thought to have lost 20% of its range in the last 3 generations through poisoning and direct persecution (Anderson 2000a).

**Actions:** Decreasing the frequency of abuse of poisons is one essential ingredient in preventing further population declines in all scavenging species (Watson 1987).

There are opposing viewpoints on the way forward. One proposal is to ban completely the poisons used for killing small carnivores from the Namibian environment (Brown 2002). This view advocates that (i) it sets a standard that using poisons for killing predators is unacceptable and not in the national interest (ii) it will cause the thinking farmer to choose other, more environmentally friendly methods; and (iii) when poisons were

banned in western Europe vulture populations showed a remarkable recovery. To add to this it has been shown that Diclofenec which is as lethal to vultures in India as strychnine is to scavengers in Africa (Oaks et al. 2004), need only occur in 0.13 to 0.75% of all carcasses in the environment to cause a 30% annual decline and eventual population crash of Indian vultures (Green et al. 2004).

The opposite view is that the total ban is (i) impractical (ii) threatens the agro-chemical industry and (iii) is too idealistic to work (Verdoorn & Komen 2002). Concentrating on stopping abuse and working with farmers to apply poisons responsibly, is seen as the only way forward.

In Namibia it is apparent that awareness campaigns and farmer education programmes have not stemmed the tide of poisonings in Namibia, because poison abuse continues to kill commoner scavenging species (Bridgeford & Simmons unpubl data). The critical point is that all farmers need to be convinced of the need for sound farming and poison-free methods, given that it is estimated that 0.1% of the farming community is responsible for the decline (Brown 2002).

In some areas of South Africa it is claimed that Bateleur populations are increasing as a result of awareness campaigns (Anderson 2000b) but before-and-after evidence for this is lacking. For this reason, the draft Parks & Wildlife Management Bill (2002) will ban the use of poisons in predator control, and permits will only be given by the Ministry of Environment & Tourism for farmers to use poisons in exceptional cases. The Bateleur like other scavengers are Protected Species under this Bill. A research monitoring programme on (i) the success of awareness programmes elsewhere where the Raptor Conservation Group is intensively targeting farmers (ii) the success of the poison ban on scavenging raptor populations in selected parts of Namibia, and (iii) the density and breeding success of prs inside and outside conservation areas in Namibia is required to monitor this and other scavengers.

**Source:** Raptors Namibia website, [http://www.nnf.org.na/RAPTORS/raptors\\_pges/bateleur.htm](http://www.nnf.org.na/RAPTORS/raptors_pges/bateleur.htm)

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## 6. Verreaux's Eagle Owl (*Bubo lacteus*) a.k.a. Giant Eagle Owl



**Description:** Very large, uniform grey (gray) eared owl, with dark eyes and bare pink eyelids. Light vermiculations above, and dense fine barring below.

**Size:** 60-65cm, 1600-3115g

**Range:** Sub-Saharan Africa, absent from Namibian desert and tropical rainforest.

**Habitat:** Dry savannah with scattered trees, riverine forest, semi-open woodland.

**Food:** Medium sized mammals including monkeys, hedgehogs, hyraxes; also larger birds, reptiles, frogs, invertebrates, fish and even carrion.

**Breeding:** Mainly breeds from March to September, nesting in old stick nests of other birds such as vultures, crows or Hammerkops. 2 eggs are laid, and are incubated for 38 days. It is normal for the second chick to disappear within the first 2 weeks. The remaining chick leaves the nest at about 9 weeks and can fly well within a couple of weeks. It can be independent by 6 months of age although many chicks remain with the parents for up to 2 years.

**Call:** Sequence of deep, nasal, grunts.

**Status:** Not globally threatened. Widespread but locally rare.

**Source:** [www.owls.org](http://www.owls.org), [http://www.owls.org/Species/bubo/verreauxs\\_eagle\\_owl.htm](http://www.owls.org/Species/bubo/verreauxs_eagle_owl.htm)

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## 7. African Pygmy-falcon (*Polihierax semitorquatus*)



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The African Pygmy-falcon (*Polihierax semitorquatus*) is a falcon that lives in eastern and southern Africa, the smallest raptor of the continent. As a small falcon, only 19 to 20 cm long, it preys on insects, small reptiles and even small mammals.

**Description:** Adult African Pygmy-falcons are white below and on the face, grey above, the female having a chestnut back. There are white "eye spots" on the nape. Juveniles have a brown back, duller than adult females, and a rufous wash on the breast. The flight feathers of the wings are spotted black and white (more black above, more white below); the tail is barred black and white.[1][2]

The flight is low and undulating. In size, pattern, and the habit of perching upright on an exposed branch or treetop, this species resembles some shrikes.[1][2]

The call is "a high-pitched kikiKIK, repeated" (Kenya)[1] or "a 'chip-chip' and a 'kik-kik-kik-kik'" (southern Africa)[2].

**Range, habitat, and population:** The African Pygmy-falcon inhabits dry bush. The subspecies *P. s. castanonotus* occurs from Sudan to Somalia and south to Uganda and Tanzania; *P. s. semitorquatus* occurs from Angola to northern South Africa.[2][3] This range is estimated to have an area of 2.7 million km<sup>2</sup>, and the total population is

estimated to be between 100,000 and 1 million birds.[3]

**Nesting:** In Kenya, African Pygmy-falcon nest in White-headed Buffalo-weaver nests, and the ranges of the two birds coincide.[1] In southern Africa, they are found around Red-billed Buffalo-weaver nests but predominantly nest in the vacant rooms of Sociable Weaver nests,[2] which are large and multichambered—even if the Sociable Weavers still have an active colony in the nest. Despite being bird-eaters and bigger than Sociable Weavers, the Pygmy-falcons largely leave the latter alone, though they do occasionally catch and eat nestlings and even adults.[4]

**Polyandry:** African Pygmy-falcons occasionally engage in polyandrous relationships, where there are more than two adults living together and tending nestlings. There are four potential reasons for this behavior: defense, co-operative polyandry, delayed dispersal of offspring, and thermoregulation (warmth). Corroboration for the last is that in winter African Pygmy-falcons nest further inside the nest of Sociable Weavers, where there is better insulation.[5]

**Source:** Wikipedia

## 8. African Grey Hornbill (*Tockus nasutus*)



The African Grey Hornbill, *Tockus nasutus*, is a hornbill. Hornbills are a family of tropical near-passerine birds found in the Old World.

The African Grey Hornbill is a widespread and common resident breeder in much of sub-Saharan Africa and into Arabia. This is a bird mainly of open woodland and savannah. The female lays two to four white eggs in a tree hollow, which is blocked off during incubation with a cement made of mud, droppings and fruit pulp. There is only one narrow aperture, just big enough for the male to transfer food to the mother and the chicks.

When the chicks and the female are too big to fit in the nest, the mother breaks out and rebuilds the wall, then both parents feed the chicks.

This species is a large bird, at 45cm in length, but is one of the smaller hornbills. It has mainly grey plumage, with the head, flight feathers and long tail being a darker shade. There is a white line down each side of the head and one on the back which is visible only in flight. The long curved bill is black and has a small casque and a creamy horizontal stripe. Sexes are similar, but the male has a black bill, whereas the female has red on the mandibles. Immature birds are more uniformly grey. The flight is undulating. The similarly sized Red-billed Hornbill has uniformly grey plumage.

The African Grey Hornbill is omnivorous, taking insects, fruit and reptiles. It feeds mainly in trees.

This conspicuous bird advertises its presence with its piping pee-o pee-o pee-o call.

**Source:** Wikipedia

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## 9. Southern Yellow-billed Hornbill (*Tockus leucomelas*)



The Southern Yellow-billed Hornbill, *Tockus leucomelas*, is a Hornbill found in southern Africa. It is a medium sized bird, with length between 48 to 60 cm, characterized by a long yellow beak with a casque (casque reduced in the female). The skin around the eyes and in the malar stripe is pinkish. The related Eastern Yellow-billed Hornbill from north-eastern Africa has blackish skin around the eyes.

They have a white belly, grey neck, and black back with abundant white spots and stripes. They feed mainly on the ground, where they forage for seeds, small insects, spiders and scorpions. Termites and ants are a preferred food source in the dry season.

Females lay 3 to 4 white eggs in their nest cavities and incubate them for about 25 days. Juveniles take about 45 days to mature. This hornbill is a common, widespread resident of the dry thorn fields and broad-leaved woodlands. Frequently they can be sighted along roads.

**Source:** Wikipedia

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## 10. Fork-tailed drongo (*Dicrurus adsimilis*)



**Distribution and habitat:** Occurs across sub-Saharan Africa, absent only from extremely arid areas. In southern Africa it is common and widespread, with massive populations in Botswana, Zimbabwe, Mozambique, Namibia and South Africa, absent from some grassland and arid habitats. It generally occurs in woodland, such as savanna and riverine woodland, but is also common in alien tree plantations, forest edges, grassland with scattered trees, farmland, gardens and parks.

**Food:** Highly adaptable, it eats a variety of animal prey, especially insects but also other birds and fish. It often hawks insects from a perch, catching them in flight or on the ground, often targeting insects flying around electric lights. It is a kleptoparasite, regularly stealing food from other birds (often within a mixed-species foraging flock) and mammals. A good example is the Suricate (*Suricata suricatta*): In the Kalahari Desert, drongos sometimes perch above a few foraging Suricates, waiting till one of them finds food, at which point it mimicks their alarm call, snatching up their prey in the ensuing confusion.

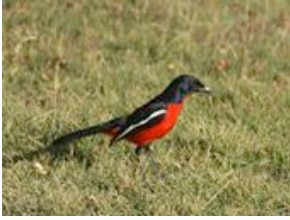
**Breeding:** The nest is a thinly-walled cup made of twigs, leaf petioles and tendrils, strongly bound together with spider web strands. It is usually placed like a hammock between the branches of a tree fork, roughly 4-6 metres above ground. Egg-laying season is from August-January, peaking from September-October. It lays 2-5 eggs, which are incubated by both sexes for about 15-18 days. The chick are fed and brooded by both parents, leaving the nest after about 16-22 days.

**Threats:** Not threatened.

**Source:** [http://www.biodiversityexplorer.org/birds/dicruridae/dicrurus\\_adsimilis.htm](http://www.biodiversityexplorer.org/birds/dicruridae/dicrurus_adsimilis.htm)

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## 11. Crimson-breasted Gonolek (formerly Crimson-breasted Shrike) *Laniarius atrococcineus*



The Crimson-breasted Gonolek (formerly Crimson-breasted Shrike) *Laniarius atrococcineus*, is an African bird occurring in a broad swathe from southern Angola to the Orange Free State in South Africa. This species was first collected by William John Burchell in 1811 near the confluence of the Vaal and Orange Rivers. He named it *atrococcineus* meaning 'black/red', finding the striking colour combination quite remarkable. The generic name *Laniarius* was first coined by the French ornithologist Louis Jean Pierre Vieillot and was meant to call attention to the butcher-like habits of the group. In South West Africa its colours reminded Germans of their homeland flag and it therefore became the Reichsvögel (Empire bird). This species is closely related to two other bushshrikes, the Yellow-crowned Gonolek, *Laniarius barbarus* and the Black-headed Gonolek of East Africa, *Laniarius erythrogaster*.

This shrike is extremely nimble and restless, its penetrating whistles being heard far more often than the bird is seen, its bright colour notwithstanding. The sexes have the same colouration and are indistinguishable from each other. A yellow-breasted form is occasionally seen, and was at first thought to be a separate species. Young birds have a mottled and barred buff-brown appearance with a pale bill.

The Crimson-breasted Gonolek's preferred habitat is drier thornbush areas, in thickets and riparian scrub. It makes small seasonal migrations, preferring lower altitudes during cold periods.

**Source:** Wikipedia

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## 12. Cape Glossy-starling (*Lamprotornis nitens*)



The Cape Glossy Starling is a Southern African bird that belongs to the Sturnidae bird family group which includes birds such as Starlings, Mynans, Oxpeckers. The Cape Glossy Starling is near Endemic to the Southern African Region which means it is mainly found in this region but is not restricted here alone. The *Lamprotornis nitens* can be found in other parts of the world.

The Cape Glossy Starling has a height of 25 cms and weighs around 90 gms. The head is coloured blue while the bill is coloured black. The *Lamprotornis nitens* has a blue coloured throat, black legs and a blue coloured back. The eyes are orange.

**Feeding Habits:** This bird forages for food on the ground. The Cape Glossy Starling is usually seen hunting for food within the tree foliage. This bird eats insects such as butterflies, bees, wasps, locusts and ants. These invertebrates are usually hawked aerially, killed and then eaten. The *Lamprotornis nitens* forages mainly on the ground or at the base of

trees, and low down in the shrubs eating mostly fruits and seeds. The bird also drinks nectar from flowers high up in the tree canopy.

**Breeding, Habitat and Nesting Habits:** The Cape Glossy Starling is a monogamous bird which means that the bird finds and breeds with one partner for the rest of its life. The bird lays between 2 to 6 eggs and they are coloured blue. The bird builds its nest within a tree cavity just a few meters above the ground. The hole in the tree is normally reused in the next nesting season. The Cape Glossy Starling is mainly found in light and densely wooded forests, where there are Mopane trees. The bird is found in the African bushveld. The bird is at home in riverine forests and close to water bodies such as lakes, dams and streams. The bird is an urban dweller as well, being at home in parks, gardens and in old vacated buildings.

**Source:** Birds of Southern Africa, <http://www.birdsinsa.com/birds/lamprotornisnitens.htm>