

VERREAUX'S EAGLE (BLACK EAGLE) | *Aquila verreauxii*

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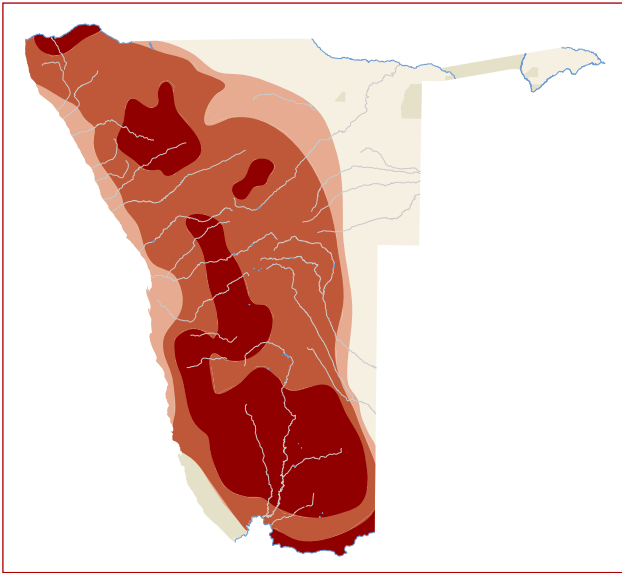
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| Conservation Status: | Near Threatened |
| Southern African Range: | Namibia, south-eastern Botswana, South Africa, Lesotho, Swaziland, Zimbabwe |
| Area of Occupancy: | 630,000 km ² |
| Population Estimate: | 500 to 1,000 pairs |
| Population Trend: | Fluctuates over time, stable to slightly declining |
| Habitat: | Nama Karoo and arid savannahs with escarpments and broken, rocky mountainous terrain associated with hyrax |
| Threats: | Persecution by farmers, drowning in farm dams |



DISTRIBUTION AND ABUNDANCE

This large, familiar eagle occurs as far north as Israel. In Africa, it breeds in the Balé Mountains of Ethiopia (Clouet *et al.* 2000) where it co-exists with the Golden Eagle *A. chrysaetos*, its closest relative (Wink & Sauer-Gürth 2000). It is not found in otherwise suitable habitat in the Sahel, but is widespread through eastern and southern Africa.

In southern Africa, it exhibits a U-shaped distribution pattern with a large gap apparent in most of Botswana and north-east Namibia. This arises from the lack of prominent highlands in a region dominated by Kalahari sands. Elsewhere in Namibia, it occupies an area of 630,000 km². Density of breeding pairs varies from one pair per 10 km² (one of the highest densities known for a large eagle) in the Matobo Hills, Zimbabwe, to one pair per 24 km² in the



Karoo, South Africa, one pair per 25 km² in East Africa, one pair per 28 km² in Ethiopia's Balé Mountains, and one pair per 35 km² to 65 km² in the Magaliesberg and Drakensberg ranges, South Africa (Brown *et al.* 1982, Steyn 1982, Brown 1988c, Allan 1988, Gargett 1990, Davies 1994, Clouet *et al.* 2000). There are no comparable figures for Namibia. However, along cliffs around the Waterberg Plateau Park, pairs occur along the 150 km escarpment at a linear density of one pair per 25 km to 30 km (Brown & Cooper 1987, Simmons 2002).

The global breeding population is unknown, but populations for the Northern, Western and Eastern Cape provinces of South Africa have been estimated at between 400 and 2,000 pairs (Davies & Allan 1997). This allows us to estimate a slightly smaller population of approximately 500 to 1,000 pairs for Namibia, based on lower reporting rates during the SABAP1 atlassing period in an area of similar size (Davies & Allan 1997). Except on the most arid western edge of their range in Namibia, populations fluctuate surprisingly little, despite four-fold fluctuations in population numbers of hyrax *Procavia* and *Heterohyrax* spp., their main prey species (Davies & Ferguson 2000, R Davies *in litt.*). In dry periods and when hyrax numbers are small, birds may temporarily disappear or switch to alternative prey. This is especially marked in drought periods (Gargett *et al.* 1995) and on average occurs once every 20 years in the Karoo (R Davies *in litt.*), but more frequently in hyper-arid areas.



ECOLOGY

Eggs are laid mainly in April to June (95% of clutches), with 57% laid in May (n=76). Late laying in July and August is probably replacement clutches. Sixty-four percent of clutches are two-egg (n=47) (Brown *et al.* 2015), but a single young is raised as a result of sibling aggression. If

successful, the single nestling fledges after an incubation period of about 45 days and a nestling period of about 95 days (Tarboton 2011), typically in late spring to early summer, and remains dependent on its parents through the summer months. Availability of prey appears to be the main determinant of timing of breeding and breeding density (Gargett 1990), but the presence of sheep carrion in winter may advance laying dates in the Karoo habitat (Davies 1994). Hyrax population crashes are likely to result in breeding failure rather than population declines in Verreaux's Eagles, presumably because eagles can temporarily switch to other prey (R Davies *in litt.*). Breeding success recorded for a pair near Windhoek was high, with two eggs laid each year for five years and one young reared in each of four of the five years (von Ludwiger 2001). Like other raptors, Verreaux's Eagles are opportunistic predators, preying on medium-sized mammals such as hares, large birds (mostly guineafowl), tortoises and occasionally carrion (Steyn 1982, Gargett 1990, Davies 1994). They prefer upland areas with broken, rocky terrain, because this is also the preferred habitat of hyrax. In a home range study in the KwaZulu-Natal Drakensberg, the birds spent 72% of their time over 39% of their range with the best hyrax habitat (Brown 1988c). However, prey base varies between habitats; hyrax comprise 89% of prey in the Karoo and only 49% in the fynbos (Boshoff *et al.* 1991). More rabbits, hares and tortoises are taken in the fynbos. Given that Verreaux's Eagles inhabit Nama Karoo, arid savannah and escarpment areas in Namibia, hyrax probably form the main component of the diet here. At times, Verreaux's Eagles appear capable of regulating hyrax populations directly by taking a significant proportion of the immatures and adults, and indirectly by confining them to rocky areas where the hyrax find cover amongst the rocks, resulting in nutritional stress, disease and population declines. The removal of Verreaux's Eagles, therefore, can significantly increase hyrax populations, in turn amplifying costs to small-stock farmers through increased competition for grazing with small livestock (Lensing 1981, Davies & Ferguson 2000).



THREATS

This species seems to be less vulnerable to poisoning and shooting by farmers in Namibia than other large raptors, particularly in large mountain systems. Its montane habitat protects it to a certain extent. On smaller inselbergs, it is more vulnerable. Verreaux's Eagle behaviour of standing imperiously on top of a sheep or lamb carcass has led farmers to assume that the eagle had killed the animal. In seven such cases investigated, six individuals had died of other causes (mainly predation by domestic dogs) and the cause of death of the seventh could not be determined (CJ Brown pers. comm.). Farmers in the Karoo in South Africa had decimated Verreaux's Eagles from the area because of perceptions of small stock predation (Davies



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1994). This resulted in a population explosion of hyrax, which ventured far from their rocky areas out over the plains, where they competed with small stock for grazing (Lensing 1983). A similar situation arose in the 1970s and early 1980s, when Verreaux's Eagles were largely eliminated by farmers in the //Karas region of southern Namibia. Today the mountainous areas of the //Karas region support a healthy population of Verreaux's Eagles again, after farmers understood the issue and began

to protect the eagles. The species has disappeared completely only from areas where their hyrax prey have been decimated, e.g. in Lesotho and communal land in Zimbabwe's Matobo Hills (Davies & Allan 1997). Use and misuse of poisons in Namibia is well known and has been responsible for the demise of scavenging species such as the Tawny Eagle *A. rapax*, Bateleur *Terathopius ecaudatus* and vultures (Brown 1988a, 1991). The Verreaux's Eagle is also vulnerable to drowning, and is one of the four top raptors most likely to drown in steep-sided farm reservoirs; a total of 17 drownings have been recorded from arid parts of southern Africa (Anderson *et al.* 1999). Young occasionally disappear from well-known nest sites in Namibia and South Africa, and some of these disappearances may be due to interference by humans (Allan 1988, D Heinrich *in litt.*).

On the positive side, Verreaux's Eagle numbers do increase relatively quickly if they are not persecuted. On the Klein Karas escarpment, the population increased from one to five breeding pairs over a period of 12 years, when the land was acquired for wildlife and tourism from former small-stock farmers (CJ Brown pers.obs.).



CONSERVATION STATUS

This species is classified as *Near Threatened* because of the threat from the high incidence of poisoning that occurs in Namibia (Brown 1988a, 1991, Simmons 1995a, Bridgeford 2001), direct persecution by small-stock farmers and its relatively small population of about 500 to 1,000 breeding pairs. The reasonably widespread population in areas of low human density, the relative immunity from human-induced mortality in Namibia and the lack of evidence of any significant decline keep it from being classified as *Vulnerable*. It should be given *Specially Protected* status in Namibia. It is not considered globally threatened (IUCN 2012a).



ACTIONS

The use of poisons for the control of predators on farmland in Namibia must be banned by the new Parks and Wildlife legislation, with provision for severe penalties for lawbreakers. Good information on the beneficial nature of Verreaux's Eagles should be promoted through farmer awareness programmes. In addition, educational material for farmers and schools (developed by the Namibia Animal Rehabilitation Research & Education Centre (NARREC) and Vultures Namibia) should be continued. The construction of hides and deployment of web cameras at appropriate nest sites should be experimented with for education and visitor awareness. Reservoir drownings can be prevented by farmers covering their water points with nylon mesh, keeping their reservoirs full, providing alternative drinking or bathing facilities, or attaching a log to the side onto which the bird can climb and escape (Anderson *et al.* 1999).