

SECRETARYBIRD | *Sagittarius serpentarius*

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Conservation Status:	Vulnerable
Southern African Range:	Namibia, Botswana, South Africa, Lesotho, Swaziland, Zimbabwe
Area of Occupancy:	226,000 km ²
Population Estimate:	Fewer than 1,500 pairs
Population Trend:	Declining
Habitat:	Open grassland, open savannah woodland, karoo shrubland
Threats:	Degraded habitat through bush encroachment, disturbance, drowning in farm reservoirs, fences, power lines

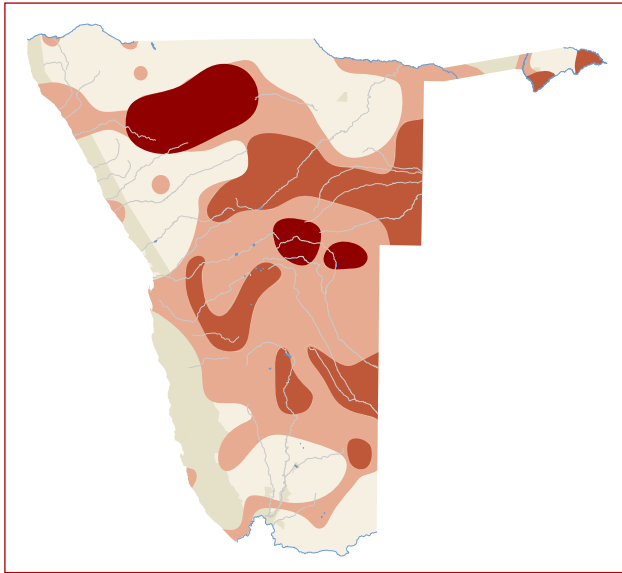


DISTRIBUTION AND ABUNDANCE

As a well-known and conspicuous raptor, the Secretarybird is a species for which bird atlas data are probably an accurate reflection of its known distribution. It is found throughout sub-Saharan Africa, but is absent from the more forested areas of central and West Africa. It is widely distributed in southern Africa and it is found throughout Namibia at low densities, although it does not occur in the Namib Desert. It is most frequently encountered in the north-central protected areas of Namibia, especially

the Etosha National Park and farmland south and east of Etosha. More surprisingly, it occurs in a strip along the Botswana border in protected areas such as the Khaudum National Park, and unprotected areas further south, despite the more wooded nature of the terrain there. It is also commonly found in the pro-Namib within the Namib-Naukluft National Park, NamibRand Nature Reserve and adjoining farmland.

There is little information on population size in most of southern Africa: an estimate of 1,068 breeding pairs was



made in 1984 for the former Transvaal (Tarboton & Allan 1984), and in 2001 the populations of the Kruger National Park and the Kgalagadi Transfrontier Park were estimated to be 250 birds and 128 birds, respectively (Kemp *et al.* 2001). There are no similar estimates for Namibia, but using densities of approximately one pair per 100 to 150 km² in suitable habitat in the Kruger National Park and the Kgalagadi Transfrontier Park (Kemp *et al.* 2001), we can guesstimate the Namibian population size. With a previous distribution encompassing 226,000 km² (SABAP1 data) the population is estimated to have been 1,500 pairs in the early 1990s. It has declined since then (provisional SABAP2 data), but there are as yet insufficient data to calculate the current population figure.

What is known from the contiguous South African population, is that there has been a decline in reporting rate in 73% of grid cells in which the species had ever been recorded. This decline was observed between the SABAP1 (1987–1992) and SABAP2 (2007–2013) reporting periods – a period of approximately 20 years (Hofmeyr *et al.* 2014). This perceived decline could, at least in part, be due to sampling variability or insufficient data, rather than reflect a true decline; however, declines to which statistical confidence could be attached were observed in 27% of the grid cells (Hofmeyr *et al.* 2014).



ECOLOGY

Unlike any other raptors, Secretarybirds spend hours walking slowly across open habitats searching for prey, striding at a pace of about 2.5 - 3km/hour (Kemp & Kemp 1977). They may be seen on their own, but usually in pairs, and occasionally in family groups of three to four birds (Kemp & Kemp 1977, Steyn 1982). Up to 50 birds may gather at waterholes in areas where drinking water is scarce (Steyn 1982). Although they tend to be active

in the heat of the day, they rest in the shade when it is particularly hot. They are known to dust bathe, and single birds or pairs roost in trees one to two hours before dark (Brown *et al.* 1982).

Secretarybirds are monogamous and build large (1 - 1.5 m diameter) nests in the top of *Acacia* thorn trees. Birds defend an area of up to 60 km² around the nest (Brown *et al.* 1982, Tarboton & Allan 1984). Territory size is likely to be larger in more arid regions, such as those in Namibia. Clutches of one to three eggs are laid throughout the year in Namibia (mean = 1.8, n=42); the majority of clutches in Namibia are laid from January to April (75% of 53 recorded clutches), elsewhere in southern Africa in April (29% of 76 recorded clutches) or May (33%), where an average of 1.2 chicks per breeding attempt is reared to fledging (Tarboton & Allan 1984, Brown *et al.* 2015). Chicks are fed by both adults via regurgitation (Steyn 1982, de Swardt 1990, Dean & Simmons 2005).

They disperse long distances after fledging (one young bird from flew 1,537 km from Sabi Sands, Mpumalanga to northern Namibia in four months: Simmons 1993) and some young have moved 600 km from their natal site in a few months (E Retief unpubl. data). Age of first breeding and survivorship are unknown. The oldest bird ringed and recovered to date was aged only three years and four months (Safring unpubl. data).

Secretarybirds feed primarily on insects, especially orthopterans (about 87% of 1,124 prey: Kemp & Kemp 1977). Numerous other types of prey are also taken, including a wide range of vertebrates disturbed in short grasslands, such as amphibians, reptiles (including snakes, lizards and tortoises), birds and their eggs (regurgitated for young on the nest: E Retief unpubl. data), rodents and other small mammals up to the size of mongoose and hare (review in Dean & Simmons 2005, Davies *et al.* 2014). They are attracted to recently burnt areas to feed on casualties of the fire (Brown *et al.* 1982). Nothing is known of their diet in Namibia, but it is assumed to be similar to that known from South Africa.



THREATS

Habitat alteration through overgrazing and bush encroachment, and habitat loss through ploughing and cultivation can reduce the Secretarybird's preferred open grassland habitat, and populations are thought to have decreased for this reason in parts of South Africa in the 1980s (Boshoff & Allan 1997a, Hofmeyr *et al.* 2014). Environmental change, including the intensification of bush encroachment through increased CO₂ levels (Bond & Midgley 2000), may therefore also have important implications for this species. The fact that most Secretarybirds in Namibia are present mainly in protected

areas implies that they are also vulnerable to disturbance. They are not susceptible to poisons in Namibia, because they do not scavenge, and the likelihood that they will be deliberately targeted is low because they do not have a reputation as a killer of livestock, as do some other raptors. Incidents of deliberate nest disturbance have been recorded elsewhere (S Hofmeyr pers. comm.). Given their propensity to drink at waterholes and bring water back to the nest for their young (Kemp 1995b), they will be susceptible to drowning in farm reservoirs, as has been recorded in Namibia (HA Scott pers. comm.). Furthermore, the birds' long legs make them susceptible to being caught and trapped on barbed wire fences, resulting in injury and death (E Retief, C Simmons unpubl. data).

Additional threats are posed by the expanding power line grid. Secretarybirds are vulnerable to power line collisions, electrocutions and entanglement in telephone lines (Ffrench-Constant 1983, Hartley 1991, C van Rooyen unpubl. data), possibly because of low-level flights between foraging patches. The Endangered Wildlife Trust of South Africa has records of 25 incidents of power line collisions involving Secretarybirds in South Africa (C van Rooyen unpubl. data). By contrast, of 600 carcasses found below 120 km of 220 kV and 400 kV power lines in the Karoo, only two were Secretarybirds (M Anderson unpubl. data).

In Namibia there were nine records of power line collisions or electrocutions in the NamPower/NNF Strategic Partnership database on power line collisions by the end of 2014 (JR Pallett, HA Scott unpubl. data). Most collisions were reported from southern Namibia (three of them following good rains), and of these two were on 132 kV lines, two were on 220 kV lines and one on a 440 kV line. Following the clearing of carcasses, three more Secretarybirds were killed in 250 km of monitored line in one year, suggesting that this is not an insignificant cause of mortality for this species (JR Pallett unpubl. data). Secretarybirds may be as susceptible to collisions as bustards, particularly if their movements are also in response to local rains (JR Pallett *in litt.*). There is also one record of a bird that was hit by aircraft at a small airstrip in Namibia, and one of a collision with a vehicle (HA Scott unpubl. data).



CONSERVATION STATUS

The widespread apparent decline of this species in South Africa (Hofmeyr *et al.* 2014, Taylor *et al.* in press) is evident from an analysis of SABAP1 records (collected 1987 to 1991) relative to SABAP2 records collected over 2007 to 2013. Declines in reporting rates across South Africa indicate a shift away from more peripheral parts of their range (especially arid western areas), and a concentration in some of the higher-lying grasslands in the Free State. While data from the Namibian SABAP2 are much sparser



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than those from SABAP1, the same reduction in range from known former areas of concentration is apparent, even in protected areas such as the Etosha, Khaudum and Namib-Naukluft national parks. This necessitates an upgrading of the species from *Least Concern* to *Vulnerable* in Namibia, in accordance with the 2013 global upgrading to *Vulnerable* (IUCN 2014), based on the scale and area over which this apparent decline is occurring. It is currently also listed *Vulnerable* in South Africa (Taylor *et al.* in press). It is listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and needs to be accorded *Specially Protected* status in Namibia.



ACTIONS

The main reasons for the widespread decline of this species are not known with any certainty, so the most pressing conservation action is research to determine these reasons. Such research should include an assessment of presence and breeding success in relation to habitat modification, human disturbance, power lines, fences and climatic factors. Power line mitigation measures, currently being implemented in Namibia (JR Pallett pers. comm.), will assist in reducing this threat to the species. However, this action would have to be widespread to assist the species across its broader range. Research comparing reporting rates between SABAP1 and SABAP2 inside our national parks (e.g. the Etosha and Namib-Naukluft national parks), where atlas coverage is good, may reveal why these charismatic birds are declining even there.