

BOOTED EAGLE | *Aquila pennatus* (*Hieraetus pennatus*)

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Conservation Status:	Endangered
Southern African Range:	Namibia, Botswana, South Africa, Zimbabwe
Area of Occupancy:	109,000 km ²
Population Estimate:	20 pairs, 250 individuals
Population Trend:	Fluctuating according to conditions
Habitat:	Mountains, inselbergs
Threats:	Few in Namibia, but vagaries could critically reduce the already small population

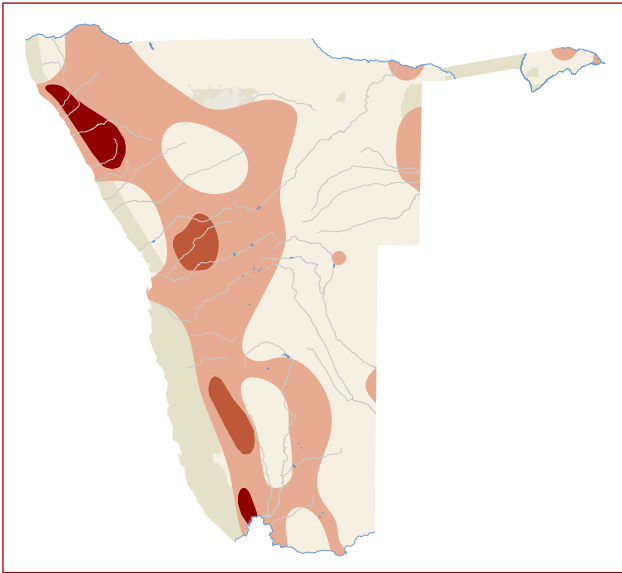


DISTRIBUTION AND ABUNDANCE

This is both a palearctic migrant to southern Africa and a breeding species within the region (Brooke *et al.* 1980, Steyn 1982). Palearctic migrants leave Namibia in March, but there is some uncertainty around the distribution and migratory patterns, as southern African breeding populations also show migratory movements within the region (Tarboton & Allan 1984, Boshoff & Allan 1997b). It has been suggested that three populations occur in Namibia: (i) palearctic migrants, present from November to March; (ii) non-breeding migrants from the South African breeding population, present from March to July; and (iii) Namibian breeding birds present from March to December (Brown & Cooper 1987). The latter breeding population of Booted Eagles is more probably a northward extension of the South African breeding population. Indeed, this species, the commonest eagle in the Western Cape Province with an estimated population of 702 pairs (Pepler *et al.* 2000), was overlooked as a breeding species in South Africa before the mid 1970s (Brooke *et al.* 1980). It is

now recognized as a genetically distinct subspecies *A. p. minisculus* (*Hieraetus pennatus minisculus*), significantly smaller than the Palearctic subspecies (Yosef *et al.* 2000).

The area of occupancy in Namibia covers 109,000 km² but this includes both migrant and breeding birds. The area occupied by breeding (resident) birds is smaller at about 70,700 km² and is generally in western Namibia. Booted Eagles have been recorded in winter from the Waterberg Plateau (up to eight birds: Brown & Cooper 1987), in the Kaokoveld Mountains in north-west Namibia, where birds were performing undulating flights (S Braine in Brown & Cooper 1987), two to three birds from the Erongo Mountains (RE Simmons pers. obs.), three to four birds from the Spitzkoppe inselberg (RE Simmons, C Boix-Hinzen pers. comm.), and up to five birds from the Brukkaros Crater, where they may have been breeding (Scholtz 2005, Simmons & Barnard 2007, CJ Brown pers. obs.). They have also been sighted along the Namibian section of the Orange River in June (A Jenkins pers. obs.), where five birds and two possible nests sites were recorded over a



50 km distance in December (Simmons & Allan 2002). If all the above-mentioned areas have breeding pairs when conditions are favourable, at least 20 pairs may breed in Namibia. Raptor road counts in the winter months in 1985, when breeding was discovered, were higher (at 4.6 birds per 1,000 km) than at any other time in the period 1981 to 1997 (Jarvis *et al.* 2001). Breeding may occur only when rains are favourable and bird prey is more numerous.



ECOLOGY

The Booted Eagle occurs in a wide variety of arid, open habitats largely associated with mountainous country and adjacent plains. In Namibia, it is associated with inselbergs in western parts and in South Africa it is particularly common in the Little Karoo and along the Great Escarpment of the Great Karoo (Martin 2005). Three nests have been reported from Namibia from the sandstone cliffs of the Waterberg Plateau Park (Brown 1985b, Brown & Cooper 1987). Others are suspected from the Spitzkoppe area (RE Simmons, C Boix-Hinzen pers. obs.), the Orange River around Noordoewer (Simmons & Allan 2002), and probably on inselbergs in other parts of Namibia when conditions allow. It is likely that nests are overlooked between these two locations, given their small size and placement behind small shrubs on cliff faces (Brooke *et al.* 1980, Brown 1985b). Egg-laying has been recorded in Namibia in June (Brown 1985b) and in South Africa in September (Brooke *et al.* 1980, Anderson *et al.* 1995). Typical clutch size is two, but sometimes only one egg is laid (Steyn 1982). Breeding success is not known for Namibia, but averages one young per pair per year in South Africa (Steyn & Grobler 1985).

It hunts most frequently over plains of dwarf shrubs and scattered stunted trees (Martin 2005). The mechanical removal of bush for agricultural purposes and the provision

of water throughout arid areas may have opened up feeding areas previously unsuitable for hunting (Brown & Cooper 1987, Martin 2005). Most hunting is done on the wing, with prey caught in spectacular swoops. About 55% of prey items are birds; lizards comprise 33% and rodents 13% (Steyn 1982). Doves and francolin are the only recorded prey from Namibia (Brown 1985b).



THREATS

There are few threats to this rare species, given that species does not scavenge, occurs in areas away from agriculture and possible persecution, and nests in inaccessible mountain regions in South Africa and Namibia. There is a high certainty that it is overlooked as a breeding species, so the breeding population is probably higher than known or estimated here. Given its reasonably small population, it is subject to vagaries that could reduce it to critically low levels.



CONSERVATION STATUS

We treat this subspecies as a breeding endemic to Namibia and South Africa for a number of reasons. Genetic evidence indicates that the southern African breeding form can be distinguished from the larger European birds (a difference of 0.29% of 1,041 base pairs) and both body mass and wing length are substantially smaller in southern birds (Yosef *et al.* 2000). Given that there are probably fewer than 250 individuals and a maximum of about 20 breeding pairs in Namibia, it is classified as *Endangered*. Although there is no evidence of a decline, population fluctuations are expected, and its endemic status and small overall population make it vulnerable to local extinction. The Booted Eagle is listed in Appendix II of the Convention for the Conservation of Migratory Species of Wild Animals (CMS). It should be designated as a *Specially Protected* species under any revised or new Parks and Wildlife legislation in Namibia.



ACTIONS

Determining the size of the breeding populations present in Namibia is a priority. Areas to focus on include the western inselbergs and escarpment, from Brukkaros to Spitzkoppe, Brandberg to the Kaokoveld mountains, as well as the Waterberg cliffs. This is best done following high rainfall years. Breeding surveys for Booted Eagles on the Namibian portion of the Orange River, beginning in September, will also probably yield positive results. Breeding success should then be monitored without disturbing breeding pairs. The discovery of birds breeding between the known distribution in South Africa and Namibia will help determine whether this is indeed a contiguous population common to South Africa and Namibia. The protection of new breeding sites will become a priority as they are discovered.