

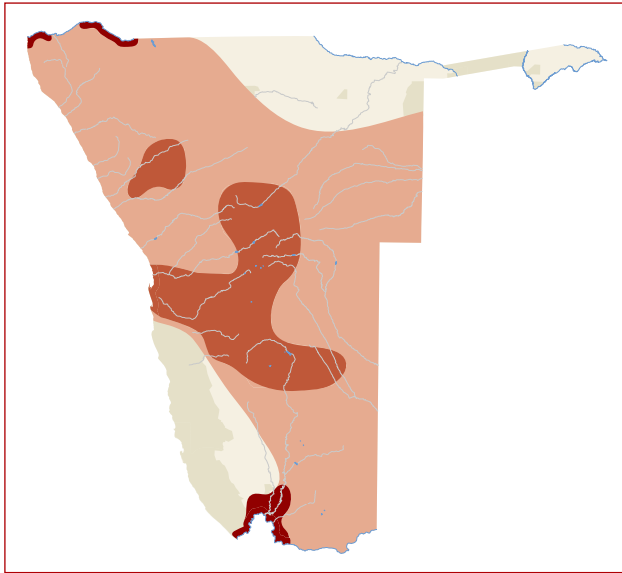
BLACK STORK | *Ciconia nigra*

RE Simmons | Reviewed by: P Bridgeford



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Conservation Status:	Endangered
Southern African Range:	Namibia, Botswana, South Africa, Zimbabwe, Mozambique
Area of Occupancy:	66,200 km ²
Population Estimate:	140 birds
Population Trend:	Declining
Habitat:	Perennial and ephemeral rivers, gorges and canyons, dams
Threats:	Drying of ephemeral rivers, flow disruption in perennial rivers



DISTRIBUTION AND ABUNDANCE

The Black Stork is widespread in the Palearctic and is migratory to sub-Saharan Africa north of southern Africa. There is a resident population that is scattered widely and sparsely in a U-shaped distribution around southern Africa (del Hoyo *et al.* 1992, Allan 1997d). The core areas are the Lesotho escarpment, and highland areas of northern South Africa and Zimbabwe; only a few birds occur in Botswana. While the birds in southern Africa are not seen as a distinct subspecies, they do represent an apparently isolated population from those in the Palearctic (Clancey 1980, del Hoyo *et al.* 1992).

The southern African population was estimated at about 400 pairs in 1985 (Clancey 1985), of which 200 pairs were resident in South Africa, and 50 pairs occurred in Lesotho (Barnes 2000b). In Namibia, it is confined to the Namib Desert's perennial and ephemeral rivers including the Kunene, Hoanib, Kuiseb, Orange and Fish rivers, with scattered records from inland dams and the one perennial river in central Namibia that runs through the Daan Viljoen Game Reserve, near Windhoek.

Black Storks have seldom been reported at the Kunene River mouth (Paterson *et al.* 2009), but occur at low density of 0.67 birds per 10 km in the river's lower gorges (approximately 15 km from the mouth) and slightly higher densities of 1.6 birds per 10 km are known from the Baynes Mountains to Ruacana (Simmons *et al.* 1993, RE Simmons unpubl. data). Tilson & Kok (1980) surveyed the Kuiseb River's gorges and reported 13 storks in 110 km of river, a density of 1.18 birds per 10 km. This occurred in a high rainfall year, suggesting it was a peak count. An estimated five birds occur in the lower Kuiseb River towards the coast; none were reported from the coast there (H Berry, C Berry unpubl. data). Few birds were present along a 50

km section of the Orange River, with a density of 0.2 to 0.5 birds per 10 km in two surveys (Allan & Jenkins 1993, Simmons & Allan 2002). Birds are reported regularly but sparsely in waterfowl counts on Namibia's inland dams (Jarvis *et al.* 2001), with typically one to six individuals occurring for short periods of time.

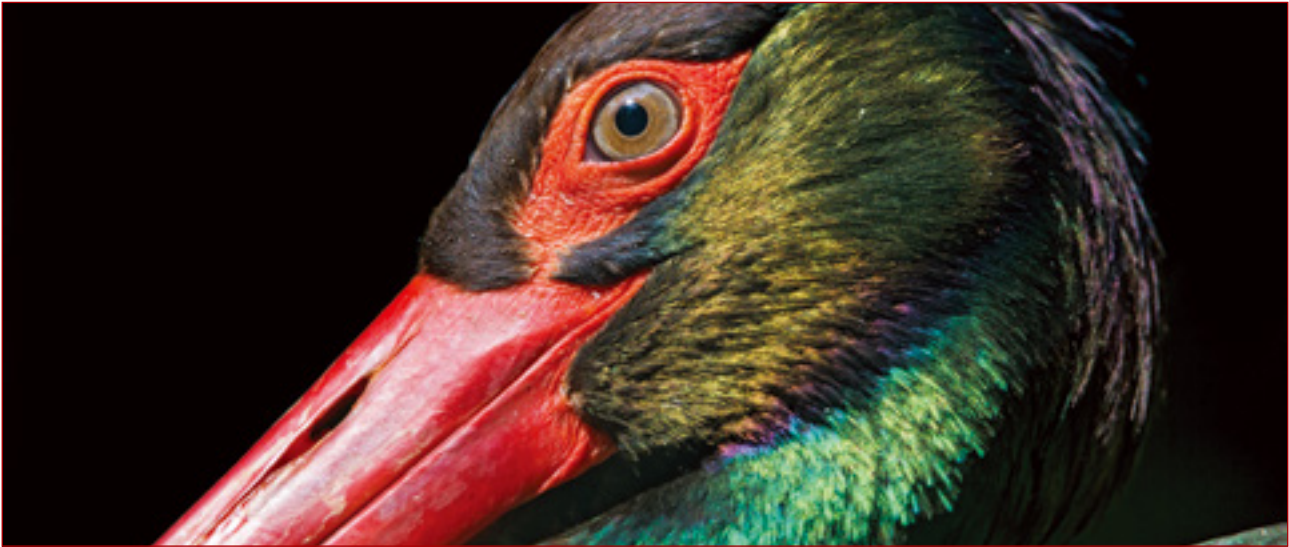
By extrapolating to the total length of the rivers, Black Stork populations are therefore estimated at 18 birds on both the Kuiseb and the Orange rivers, five birds along the lower Kunene River and 44 on the middle Kunene River. In addition, there are an estimated 18 birds along the Fish River, 33 on inland dams (Jarvis *et al.* 2001), and two birds at Daan Viljoen Game Reserve. This gives an estimated population of 103 birds regularly associated with Namibia's rivers and 35 birds associated with inland dams. Up to 21 Black Storks, including immature birds, have also been reported from farms on the southern side of the Naukluft Mountains along the Zebra River in the Tsaris Mountains (C Buhrmann, J Buhrmann, A Walkden-Davis pers. obs.). Namibia's total population of Black Storks probably fluctuates around 140 birds, with more birds present when the ephemeral rivers enjoy higher flow.



ECOLOGY

Black Storks are found where ephemeral pools remain in rocky river gorges, allowing birds to feed on fish and frogs. They occur singly or in pairs, according to most observations (Tilson & Kok 1980), and are resident throughout the year in the gorges and canyons of ephemeral rivers such as the Kuiseb River. Birds require pools in which to feed, and these are usually present in the Kuiseb River every month, except during floods. The decreasing size and increased availability and concentrations of fish (e.g. barbel) and amphibians (e.g. *Xenopus* frogs) during the drier winter months seems critical to the ecology of the storks in the Kuiseb River canyons (Tilson & Kok 1980). Floods, however, change the availability of food and coincide with the dispersal of adult birds away from the canyons, although it is not known where they disperse to (Tilson & Kok 1980).

Breeding records are very sparse, but correspond with the drying of the river pools in winter. A pair was seen sitting on a nest on a small tributary of the Kuiseb River in July 1994 (C Berry unpubl. data), while a recently fledged nestling was found in November 1977 (Tilson & Kok 1980), suggesting an egg-laying event in August. A fledged bird with an adult has also been reported from the Huab River (B Brell pers. comm.). Three other records, two of eggs, and one of a nestling, are recorded from September (Jarvis *et al.* 2001). Four inactive nests were seen in a 50 km stretch of the Orange River west of Haibmond in December 1997, but only one adult was seen along the same stretch of river



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(Simmons & Allan 2002). One nest was active for three years in a river gorge near the Tsaris Mountains on Neuras Farm and produced at least one offspring in that period (A Walkden-Davis pers. comm.).

While Black Storks produce large broods in Europe (up to five chicks); small broods are produced in southern Africa, averaging 2.3 young (Tarboton 1982). This is one of the few bird species that practice parental infanticide, selectively killing the youngest in large broods by picking them up and throwing them out of the nest (Klosowski *et al.* 2002). They nest in trees in Europe and on cliff faces in southern Africa.



THREATS

The multiple damming of the Kuiseb River by farmers has resulted in fewer floods coursing down its length to reach the mouth at Walvis Bay (Jacobsohn *et al.* 1995). This means that the permanent pools that are replenished by the floods annually are less likely to be filled, resulting in less dependable food sources for resident storks. This, together with the generally decreasing rainfall over southern Africa (Mendelsohn *et al.* 2002) and the exacerbating influence of global warming (Root *et al.* 2003, Simmons *et al.* 2004), is likely to reduce the number of Black Storks resident and breeding in Namibia. This has also been identified as a problem in Lesotho and northern South Africa (Allan 1997d, Barnes 2000b). Elsewhere, this species has suffered from poisoning and it appears to avoid contact with humans, suggesting that it is susceptible to disturbance.



CONSERVATION STATUS

This species is classified as *Endangered* in Namibia because of its very small population of about 140 individuals, which may decline as ephemeral rivers are increasingly dammed for agricultural purposes. For this

reason, it should be given *Specially Protected* status in revised or new Namibian Parks and Wildlife legislation.

The global population is not considered threatened (IUCN 2012a) and is estimated at about 30,000 pairs. The isolated southern African population only numbers between 1,560 and 4,050 birds (Wetlands International 2002) and is listed as *Vulnerable* in South Africa (Taylor *et al.* in press). This means that Namibia's population represents about 3% to 9% of the southern African population. Populations are assumed to be stable in southern Africa (Wetlands International 2002), but are likely to decline in Namibia because of the excessive damming that is taking place on rivers where it occurs and breeds. Inland dams are unlikely to take the place of these rivers because they do not provide the cliff-sites or the isolation necessary for breeding. The species is listed on Annex 2 of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) and in Appendix II of the Convention for the Conservation of Migratory Species of Wild Animals (CMS).



ACTIONS

Riverine surveys of all potential sites are required in order to estimate the total population and assess the breeding activity, so as to determine whether the Namibian population is self-sustaining. Determining the genetic status of the southern African population is also required, given its apparent isolation from populations in the rest of Africa. If it can be differentiated, then its status will remain as *Endangered*. If it cannot be genetically differentiated, its IUCN conservation status would technically fall away and it would be classified as a *Rare and Peripheral* species. Reducing disturbance to the natural flow regime of ephemeral and perennial rivers in Namibia is a priority if this species has any chance of long-term survival in Namibia.