

WATTLED CRANE | *Grus carunculata*

RE Simmons | Reviewed by: R Beilfuss; K McCann; HA Scott



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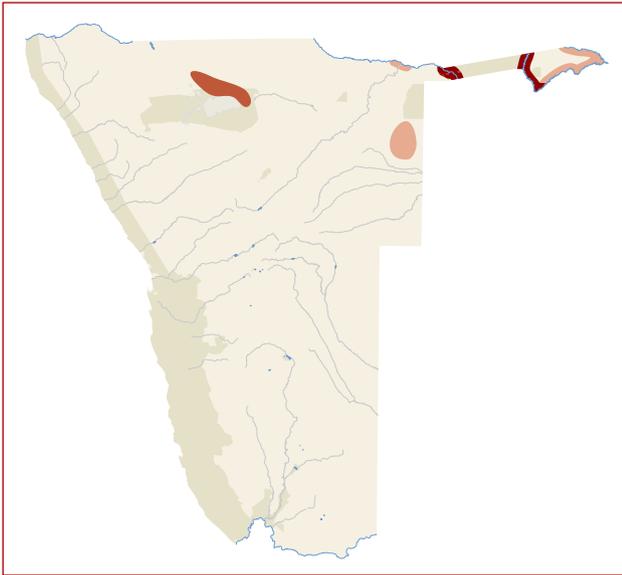
Conservation Status:	Endangered
Southern African Range:	Namibia, Botswana, South Africa, Zimbabwe, Mozambique
Area of Occupancy:	18,000 km ²
Population Estimate:	250 birds, 10 breeding pairs
Population Trend:	Fluctuates, depending on rainfall and flooding
Habitat:	Large permanent wetlands and ephemeral grassy pans
Threats:	Wetland degradation, grass burning, disturbance



DISTRIBUTION AND ABUNDANCE

This species, the largest and rarest crane in Africa, occurs in three discrete populations in Ethiopia, south-central Africa and South Africa (Jones *et al.* 2006), covering 11 countries (Beilfuss *et al.* 2003). Its strongholds are the huge wetland areas of Zambia and the Democratic Republic of Congo, as well as the Okavango Delta of Botswana, which forms the centre of its southern African distribution, with an estimated 1,300 individuals (Motsumi *et al.* 2007).

A tiny overflow from these populations is found in Namibia's northern swamps, with influxes from its stronghold due to flooding and burning in the Okavango Delta and the Makgadikgadi Pans (Herremans *et al.* 2002, Hancock 2002). There it occurs in the floodplains of the northern Okavango, Kwando, and Chobe rivers. Other populations are regularly found in the ephemeral pans near Tsumkwe, with a maximum of between 150 and 275 birds (Hines 1993, Sivhute & Cunningham 2005) and with Nyae Nyae Pan holding up to 95 birds (Jarvis *et al.* 2001, Kolberg



at 13,000 to 15,000 birds (Stattersfield & Capper 2000), but recent co-ordinated aerial surveys through the key wetland systems of south-central Africa have shown the population to be approximately 8,000 individuals, a figure that mainly reflects an improved census estimate, but also some intrinsic decline of the African population (Beilfuss *et al.* 2003, 2007).



ECOLOGY

The Wattle Crane prefers the large, low-lying wetlands and swamps of northern Namibia, and ephemerally flooded pans, where food is plentiful. This is in contrast to the habitat preferred in South Africa that comprises high altitude, small, permanently flooded wetlands surrounded by natural grasslands, and temporary irrigated and dryland cultivated agricultural lands (Allan 1997h, McCann & Benn 2006).

2012a), Up to 50% of groups in these pans comprise two adults and a grown subadult bird (Hines 1993, Sivhute & Cunningham 2005), and although this area holds the greatest number of Wattle Cranes in Namibia (Simmons *et al.* 2001b), no breeding has ever been recorded there. However, it is likely to be an important post-breeding dispersal area for birds breeding in Angola, Botswana and Zambia (Beilfuss *et al.* 2003). Small numbers of birds also occur regularly at ephemeral lakes at Oponono and Oshituntu, north of Etosha (W Versfeld pers. obs.), the Mahango area of the Bwabwata National Park, the Kwando River and Sishika Channel (Jarvis *et al.* 2001). A few individuals occur in the Oshana region north of Etosha National Park during wetter periods.

A total of 20 individuals were counted in 2004 during an aerial survey of the Caprivi river systems of the Caprivi Strip, with a clear concentration of birds near the southern end of the Kwando-Linyanti system (Brown *et al.* 2004). An aerial survey of the same area in 2007 produced 29 individuals; these were largely confined to the Nkasa Rupara (Mamili) and Bwabwata national parks (Brown *et al.* 2007). An aerial survey of the same area in 2009 recorded 41 birds, most on the Zambezi-Chobe floodplains after exceptional flooding (Chase 2009). Aerial surveys of the Linyanti Swamps revealed 36 birds in June 1986 (Williams 1987c), eight birds in August 2004 and none in September 2007, suggesting a potential decline in the area, although the apparent decline could also be an indication of seasonal movement.

The Namibian population is estimated at about 250 birds (Beilfuss *et al.* 2003), but this probably fluctuates as birds leave the ephemerally flooded pan systems in north-eastern Namibia as the pans dry out in late winter (Hines 1993). The African population was previously estimated

It requires shallow flooded wetlands, in which it builds its large ground nest, surrounded by a small open moat. It does not tolerate disturbance (Dennis & Tarboton 1993) at the nest. Little is known of breeding in Namibia, despite subadult birds appearing in the flooded Tsumkwe Pans each year, but breeding is recorded from floodplains in the Kwando, Linyanti, Okavango and Chobe rivers (Williams 1987c, Jarvis *et al.* 2001). Egg-laying peaks in June to August (86% of 14 records: Brown *et al.* 2015), and is spread from June to September, slightly later than in South Africa, where breeding peaks from May to August (McCann *et al.* 1998). Clutches of one to two eggs are laid (Johnson & Barnes 1991, McCann *et al.* 1998), and typically only one chick fledges. The young birds stay with their parents until about one year old, when the adults begin to breed again.

In Namibia, its diet consists largely of small amphibians and tubers. Elsewhere it also feeds on animals such as reptiles, fish, aquatic snails and insects, as well as plant matter, including grass seeds, bulbs and rhizomes (Allan 2005c).



THREATS

Because the Wattle Crane rears only one young (McCann *et al.* 1998) and reaches sexual maturity as late as eight to nine years old (McCann *et al.* 1998), its breeding rate is slower and generation time is longer than those of any other terrestrial bird in Africa. It has the lowest reproductive rate of any crane species worldwide (Meine & Archibald 1996). Thus, the ability to recover from natural disasters or anthropogenic disturbance is limited. Degradation of wetlands is given as the main reason for the decline in Wattle Crane populations in southern Africa (Allan 1997h, McCann 2000c, McCann & Benn 2006). However, the wetlands frequented by cranes in Namibia are either partially protected by conservancies (Nyae Nyae and

surrounding pans), remote and rarely visited by humans (Oponono and Oshituntu lakes) or inaccessible (Linyanti and Chobe swamps). Direct human disturbance is thus likely to be minimal, although the absence of Wattled Cranes from conservancies along the Kwando river system, and possibly also along the Okavango and Zambezi River systems during the 2007 aerial survey suggests that cranes may be disturbed or persecuted in these areas (Brown *et al.* 2007).

In addition, the substantial use of fire in the northern regions (Mendelsohn & Roberts 1997) is likely to destroy nests occupied in winter or early spring. Disturbance by tourists at increasingly popular tourism destinations such as Nyae Nyae Pan may pose a threat, although most of these areas are flooded when breeding is likely to occur and therefore inaccessible. Flow regulation of major rivers in north-eastern Namibia is a probable threat.

CONSERVATION STATUS

This species is classified as *Endangered* because of its very small population of about 250 birds within Namibia. Population numbers appear stable (Kolberg 2012a), but tend to fluctuate seasonally as adults and their young move in and out of Namibia. Although the small and discrete South African population is genetically distinct from the south-central African population (Jones *et al.* 2006), the Namibian population is probably contiguous with the large Okavango Delta population, given the large movements known to be made by this species (McCann *et al.* 2001) and therefore not at risk of losing genetic diversity. The largest concentration of birds occurs on the Nyae Nyae Pans (Jarvis *et al.* 2001), a conservancy and one of Namibia's 21 Important Bird Areas (Simmons *et al.* 2001b). However, these areas are not formally conserved.

The species is considered globally *Vulnerable* because of a relatively small global population size that may be declining (IUCN 2012a). It is listed as *Critically Endangered* in South Africa, where its genetically distinct population is estimated at 230 individuals following a decline of 36% over two decades, a range restriction as the result of severe habitat destruction, particularly of grassland habitat surrounding breeding wetland sites, as well as losses due to collisions with power lines (McCann 2000c, Taylor *et al.* in press). For these reasons, the species needs to be given *Specially Protected* status under any updated or future Namibian Parks and Wildlife legislation.

It is listed in Annex 2 of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and in Appendix II of the Convention for the Conservation of Migratory Species of Wild Animals (CMS).



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ACTIONS

Understanding the movement of individuals and determining the possible location of a suspected but unknown breeding population in Namibia (numbering tens of pairs), for example through satellite tracking studies, is the highest priority. With the largest concentration of Wattled Cranes centred on the Nyae Nyae Pans, the enhanced protection of this area is a priority, particularly since it may be a nursery area for subadult birds that are still under parental care and that were hatched elsewhere in southern Africa. Because of the extended time to sexual maturity in this long-lived species, this stage of its life is critical to the long-term maintenance of the population. Regular monitoring of this area in particular should thus be continued; power lines to the north, north-east and east of the Etosha National Park should be monitored for signs of Wattled Crane collisions, and should be appropriately mitigated as necessary. In 2004, the Namibia Crane Working Group was established to address crane conservation in Namibia, including the drafting of a Crane Action Plan (Scott & Scott 2009). A regular newsletter, published by the working group (<http://www.nnf.org.na/CRANES/index.htm>), reports on surveys, conservation of critical habitat, capacity building activities and crane-related tourism.