AFRICAN SKIMMER | *Rynchops flavirostris*

RE Simmons | *Reviewed by: M Paxton*

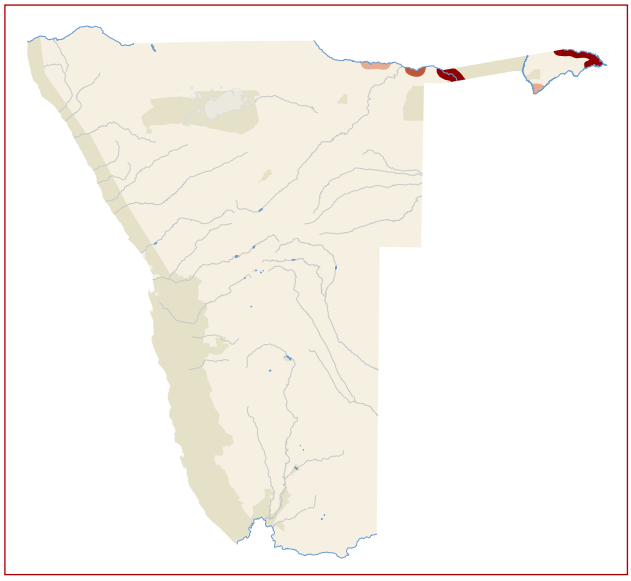
© Johann Grobler

Conservation Status:	Vulnerable
Southern African Range:	Namibia, Botswana, Zimbabwe
Area of Occupancy:	9,000 km^2
Population Estimate:	Maximum of 1,200 birds
Population Trend:	Stable, with marginal increases in low flow years
Habitat:	Tropical rivers
Threats:	Breeding disturbance, unsustainable fishing, altered river flooding

DISTRIBUTION AND ABUNDANCE

This striking riverine species occurs throughout large parts of sub-Saharan Africa from western to southern Africa, where it is distributed sparsely except for the northern region's tropical rivers, where it is more common (Tree 1997d). It is most common on the Okavango River in Namibia and in the Okavango Swamps in Botswana (Tree 1997d) where reporting rates were about 9% during the SABAP1 atlassing period. It is also found on the Chobe River in Namibia and Botswana and on the Zambezi River in Namibia and north-west Zimbabwe. Its population in eastern and southern Africa is thought to number between 8,000 and 12,000 birds (Dodman 2002). Within the last hundred years, it has stopped breeding in South Africa at Lake St. Lucia (Barnes 2000a) and it appears to have declined throughout its range as the sandy islands where it breeds have become degraded (Williams 1986, Tree 1997d).

Numbers clearly fluctuate with flooding of rivers such as the Okavango River; wetland counts at the Mahango area of the Bwabwata National Park from 1991 to 2000 indicated a slow increase from an average of 25 birds in the first five years to 56 birds per visit in the latter five years (M Paxton in Jarvis *et al.* 2001). Density estimates from the Zambezi River have also increased since 1998, from 4.3 birds per 10 km in 1998 to 129 birds per 10 km in 2000 (J Scheepers in Jarvis *et al.* 2001). Between 2000 and 2003, large influxes of skimmers occurred on the Zambezi and Okavango rivers in September and October (Paxton 2004, J Scheepers unpubl. data). The total number of African Skimmers in Namibia can be extrapolated from these densities (55 birds per 10 km on the Zambezi River and 280 birds per 10 km on the Okavango River) because they are rarely reported from elsewhere in Namibia (Jarvis *et al.* 2001). Extrapolations suggest that the Zambezi River, with 155 km in Namibia (Mendelsohn *et*



al. 2002), could support 800 to 900 birds. The length of the Okavango River where skimmers have been recorded is approximately 160 km (Tree 1997d) but the only known breeding areas and concentrations are in the Mahango area, thus extrapolations are inappropriate. The total population along the Okavango River comprises 336 birds in 12 km in the Mahango area (Paxton 2004) and 23 to 35 birds near the Cuito River confluence (M Paxton *in litt.*). The total Namibian population is therefore a maximum of about 1,200 birds.

ECOLOGY

The African Skimmer prefers large tropical rivers and dams where it occurs in small or large flocks, occasionally numbering over 1,000 individuals (Coppinger *et al.* 1988) or in small breeding colonies of 10 to 70 nests (Williams 1986, Paxton 2004, L Scheepers unpubl. data). It breeds on sandbank islands surrounded by deep water or those joined to river banks. Two to four eggs are laid into a scrape in the sand (Modha & Coe 1969, Williams 1986, Paxton 2004). Breeding records for Namibia are few, but increased breeding activity took place in the period 1991 to 2000 in nearby Botswana (Vial 1995) and in Namibia on the Okavango and Zambezi rivers. On the Zambezi River in October 2002 J Scheepers (unpubl. data) found five colonies with 26, six, 28, 35 and 71 nests in the 60 km between Katima Mulilo and Schukmansburg; observations of nest contents suggested that egg-laying was still in progress at the time. On the Okavango River, 12 colonies were found in October 2003 in 12 km within the Mahango area and contained up to four eggs (Paxton 2004). Of the 196 nests found, at least one egg hatched in 62% of 150 nests checked. Hatching failure was high (65% of 436 eggs) and was due to desertion (24%), predation by herons and monitor lizards and trampling by buffalo and hippo (21%), unknown causes (17%) and weather-related causes (3%). Many nests were buried by wind-blown sand, but few were washed away. Only 10% of eggs laid produced fledged young (Paxton 2004). In earlier studies, Williams (1986) found 13 active nests with clutch sizes of three (four nests) and two (eight nests) on the Okavango River, also within the Mahango area.

Namibia's nesting records show that eggs are laid in July (one record), August (nine), September (two) and October (one), with a mean clutch size of 2.4 (range 2 to 4, n=37) (Brown *et al*. 2015). Additional data from the Zambezi and Okavango rivers suggest that breeding extends from June to December with a peak in October (Paxton 2004, J Scheepers unpubl. data).

The unusual semi-nocturnal foraging behaviour of this species is well documented (Hockey 2005d), and its unique trawling behaviour with the open bill skimming the surface of the water enables it to capture small fish of 15 mm to 140 mm. Prey includes topminnows *Aplocheilichthys* spp., barbs *Barbus* spp. and tilapia *Tilapia* spp. (Paxton 2004).

THREATS

Success of African Skimmer colonies is compromised by direct disturbance from humans and through trampling by buffalo, hippo and elephant. Habitat disturbance and degradation occurs in the form of bike tracks across colonies and heat stress to eggs and chicks from observers keeping adults away (Williams 1986, J Scheepers unpubl. data). Wave-wash from motorised boats speeding past colonies causes egg and chick loss in Botswana, but not in Namibia (Vial 1995, Paxton 2004).

Human population pressure on the Okavango River is high (Mendelsohn & el Obeid 2004) and fishing pressure intense (Hay *et al.* 2000). This, together with the use of small-mesh mosquito nets by fishermen that capture the smallest fish has led to a depletion of fish populations in some areas and a degradation of the river biota (Hay *et al.* 1996, 2000), except within fish sanctuaries such as the Mahango area. The effect of this pressure became apparent when guerilla activity in 1999 forced local inhabitants away from the river, and fish and wetland bird populations rebounded sharply (M Paxton in Simmons 2003).

Birds associated with the lower Zambezi River appear to have been displaced due to the lack of water fluctuations as a result of the dam at Kariba. The unvegetated sandy islands that previously emerged as water levels receded, providing ideal breeding habitat, now support vegetation and are unsuitable for breeding birds (Tree 1997d). These birds may have moved to highveld dams where islands and fish populations occur (Tree 1997d). Any development that

© Mark Paxton

impacts on wetland integrity and/or river flow patterns such as weirs, dams, diversions, hydro schemes, channelisation and restriction of flow of water to floodplains may alter the ecology of the islands, making them unsuitable for African Skimmers. This may have a greater influence on Namibia's African Skimmer population, given that there are greater skimmer densities on the Okavango River (and downstream in the delta) than on the Zambezi River.

CONSERVATION STATUS

This species is classified as *Vulnerable* because of its small population size that does not exceed 1,200 birds, which has probably slowly declined over several decades as its riverine habitat has been degraded by over-fishing, tourists and cattle (Hay *et al.* 1996), and because of the future threat of diversion weirs on the Okavango River. Small increases as reported above may occur when river flow is low. The global classification is *Near Threatened* (IUCN 2012a), because of a relatively small population estimated at 10,000 to 20,000 birds, which is known to be declining.

The estimated area of occupancy in Namibia is 9,000 km^2, of which only 19% is contained within protected areas. This is an overestimate, since the bird is confined to riverine habitat. The African Skimmer survives in Namibia probably only because of the fish sanctuary provided by the protection offered by the Mahango area on the Okavango River. It has been included in Appendix II of the Convention for the Conservation of Migratory Species of Wild Animals (CMS) and in Annex 2 of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA). It should be given *Specially Protected* status in revised or new Namibian Parks and Wildlife legislation.

ACTIONS

Regulation of river flow and the decline of fish stocks along the Okavango River are the two greatest threats to African Skimmers that require action to mitigate their impacts. It is clear from the natural experiment of local inhabitants moving away from the river in 2000 that fishing pressure is directly responsible for small numbers of fish and fish-eating birds (Simmons 2003).

Thus, establishing more protected areas, possibly as conservancies and community-managed fish protected areas along the Okavango River is of greatest importance to protect African Skimmers and other river-dependant species. There are several tourist lodges along the Zambezi and Okavango Rivers that bring income to local inhabitants and could form the centres of these protected areas. Limited reed cutting and sport fishing could occur, but fishing with gill or mosquito nets should be prohibited at all times, and replaced with traditional fishing methods.

Any proposed development that would have an impact on the hydrology of one of Namibia's perennial river systems must be subject to a full and thorough environmental assessment with high importance afforded to the ecological requirements of the African Skimmer and other Red Data wetland birds. Disturbance to breeding colonies should be limited and protection offered to the most productive breeding sites identified on the Okavango River. This includes limiting visits by tourists and researchers, particularly at the hottest times of the day.