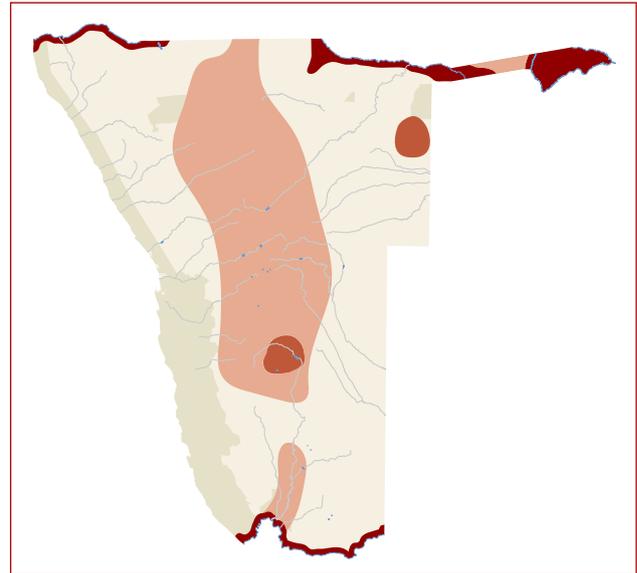


AFRICAN FISH-EAGLE | *Haliaeetus vocifer*

RE Simmons | Reviewed by: P Steyn



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Conservation Status:	Vulnerable
Southern African Range:	Namibia, Botswana, South Africa, Zimbabwe, Mozambique
Area of Occupancy:	75,200 km ² , including 2,100 km of border rivers
Population Estimate:	550 individuals
Population Trend:	Stable to decreasing
Habitat:	All perennial rivers and dams and pans – when inundated, sewage works
Threats:	Over-fishing, pesticide abuse, degradation of riverine habitat

inland where it is found on inland dams, particularly the larger dams, and on river pools when they are inundated. It is vagrant to the coast and is usually only seen at the estuaries of the Kunene and Orange rivers. Namibia has 2,100 km of perennial river (Mendelsohn *et al.* 2002) and fish-eagles occur along most sections. It occupies about 75,200 km² in Namibia, of which 15% lies within protected areas (Jarvis *et al.* 2001).

Highest densities occur along the perennial tropical rivers and at lowest densities along the perennial desert rivers. Average linear densities, recorded over a 10-year period and measured as birds per 10 km, were 1.3 birds on the Kunene River, 2.3 birds on the Okavango River, 6.0 birds on the Kwando River, 3.6 birds on the Chobe River, 3.1 birds on the Zambezi River (when people were absent) and 1.6 birds on the Orange River (RE Simmons unpubl. data). The highest concentration of birds is found in the Mahango area of the Bwabwata National Park, just before the Okavango River flows south into Botswana, where an average of nine birds has been recorded in the period 1996–2005 with a maximum of 23 birds (M Paxton, L Sheehan unpubl. data).



DISTRIBUTION AND ABUNDANCE

The African Fish-Eagle is found mainly in border areas of Namibia along the perennial rivers (Boshoff 1997b). Densities vary greatly depending on aridity, which probably influences fish populations and the number of tall trees available for breeding. It occurs much more sparsely

The global breeding population was estimated by Brown *et al.* (1982) at 100,000 to 200,000 pairs. Namibia's population is estimated at a surprisingly small 550 individuals, based on the density estimates above and those from inland dams and pans. Populations may fluctuate with water levels in impoundments. If this is the case, we can expect to see reduced numbers of African Fish-Eagles on inland dams in

future years, due to the long-term decline in annual rainfall and the high evaporation rates which, in Namibia, always exceed the precipitation rate (Mendelsohn *et al.* 2002).



ECOLOGY

Intimately tied to water bodies, flowing or stationary, the majority of Namibia's African Fish-Eagle population is found on perennial rivers and the remainder (approximately eight percent) occurs on inland dams (RE Simmons unpubl. data). Birds perch-hunt from, and nest in, large trees overlooking rivers and dams. The African Fish-Eagle catches mainly fish, but also takes water birds, small birds, terrapins, snakes and carrion, and has been known to pirate other species of their prey (Brown *et al.* 1982, Steyn 1982). Eggs are laid from May to July (n=28, Brown *et al.* 2015) with young in the nest from July (two) through August (three) to November (one: Jarvis *et al.* 2001). It breeds slightly earlier elsewhere in southern Africa, with egg-laying from April to June in Zimbabwe, and from May to June in Botswana and north-eastern South Africa (Tarboton & Allan 1984, Boshoff 1997b). Nothing is known of the breeding success or factors that limit this species' populations in Namibia. High densities on some rivers in other parts of Africa give this species the distinction of having higher breeding densities than any other large eagle in Africa. This and other aspects of the African Fish-Eagle's biology in southern Africa are described by Steyn (1982) and Simmons (2005a).



THREATS

A recently identified and quantified threat is intense over-fishing by humans driving away birds from otherwise suitable rivers. Most rivers in arid regions support dense human populations in Namibia (Mendelsohn *et al.* 2002), particularly along the Okavango River. In the 10-year period prior to 1999, no fish-eagles were recorded in wetland counts along short sections of the Okavango River, east of Rundu. This was confirmed by DG Allan (unpubl.data) along 52 km of river. However, as people moved away from the river following guerilla activity after 1999, fish-eagles immediately returned and began breeding. The density rose in one intensively monitored area (M Paxton, L Sheehan unpubl. data) from 0 to 2.25 birds per 10 km within months of the resident people leaving (Simmons 2003). Since large fish concurrently returned (C Hay unpubl. data), the cause for small fish-eagle numbers was probably the absence of prey of adequate size. Nets, including mesh as small as mosquito netting, are used daily by the local people, and consequently remove virtually all fish from the river (M Paxton unpubl. data). Degradation of wetlands, especially of rivers such as the Okavango River (Hay *et al.* 1996), has negatively impacted fish-eagle populations in similar waterways in Zimbabwe (Douthwaite 1992).

Pesticides, particularly DDT, continue to be a threat where they enter the water system, thinning egg shells and causing reproductive failure of breeding eagles. The effect appears to be localised (Douthwaite 1992, CJ Brown unpubl. data) and may occur where pesticide-filled barrels are illegally emptied or spraying equipment is cleaned in the rivers, causing massive fish mortality (M Paxton pers. obs.). There is no firm proof, however, that organochlorines have limited African Fish-Eagle populations in southern Africa (Davies & Randall 1989). One reason may be that persistent toxic chemicals entering Namibia's hot environment, especially pans, appear either to be denatured by the high temperatures or to evaporate under the intense sun (CJ Brown unpubl. data).



CONSERVATION STATUS

This species is classified as *Vulnerable* because of its surprisingly small total population in Namibia of fewer than 600 birds. Given that most of its population occurs on rivers that are heavily utilised in arid regions by humans, the species continues to face threats such as over-fishing. Thus, we can expect declines to occur where stringent measures are not enforced to prevent over-fishing. It is presently under little threat at inland dams and sewage works but smaller dams may be less likely to support eagles in future years if rainfall decreases and temperature increases under climate change scenarios.

Because of its large range and large total population, it is not considered globally threatened (IUCN 2012a). It is rarely found in four of Namibia's Ramsar sites (Etosha, Walvis Bay, Sandwich Harbour and the Orange River mouth), but is well represented in the protected areas of north-eastern Namibia and needs to be accorded *Specially Protected* status under any updated or future Parks and Wildlife legislation.



ACTIONS

Prevention of over-fishing through strict control of appropriate net mesh sizes on all northern rivers is required. River-based conservancies with fishing-free zones should be created to allow fish to spawn and grow and thus disperse into areas where they can be used by man and eagle. Legislation should be introduced to protect large riverine trees. Strict control is required regarding pesticide spraying near water bodies and the practice of washing and emptying toxic chemical containers and spraying equipment into water bodies, including rivers. Breeding attempts should be monitored, particularly to gather information on breeding success, and where appropriate, unhatched eggs should be collected for pesticide analysis.