

DISTRIBUTION, STATUS AND FIRST BREEDING RECORD OF THE GREY KESTREL IN SOUTHERN AFRICA

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SUMMARY

In southern Africa the Grey Kestrel *Falco ardosiaceus* is confined to an area of about 15 000 km<sup>2</sup> in the north-central region of Namibia, between the Etosha National Park and the Angolan border. It has been recorded from 19 quarter-degree squares and is likely to occur in an additional six. There is about 6700 km<sup>2</sup> of suitable habitat within this range, mainly in the palm-savanna vegetation of the ephemeral Cuvélai drainage system and the adjacent bush savanna, along drainage lines and in cleared areas. The Namibian population of Grey Kestrels is estimated to number about 39 pairs. Grey Kestrels are resident and breed within Namibia. We report here on the first confirmed breeding record for southern Africa, consisting of a four-egg clutch laid in a hole high up in a dead palm tree. Observations on breeding and hunting behaviour are recorded and the measurements of two trapped birds are given. (*Journal of African Raptor Biology* 10 (2): 52-57)

DISTRIBUTION, STATUT ET PREMIER CAS DE REPRODUCTION DU FAUCON ARDOISE EN AFRIQUE AUSTRALE

RÉSUMÉ

En Afrique australe, le Faucon Ardoisé *Falco ardosiaceus* est confiné à une superficie d'environ 15 000 km<sup>2</sup> dans la région centre-nord de la Namibie, entre le Parc National d'Etosha et la frontière de l'Angola. On a observé cette espèce dans 19 carrés de 15' par 15', et il est probable qu'elle existe aussi dans six autres. Il y a environ 6700 km<sup>2</sup> d'habitat approprié dans cette région, principalement dans la savane palmiste du système hydrographique éphémère de Cuvélai et dans la savane broussaillieuse adjacente, le long des systèmes de drainage, ainsi que dans les régions défrichées. La population namibienne compte environ 39 paires. Les Faucons Ardoisés sont sédentaires et se reproduisent en Namibie. Nous rendons compte ici du premier cas confirmé de reproduction en Afrique australe, consistant d'une couvée de quatre œufs dans un trou situé dans la partie supérieure d'un palmier mort. On a enregistré des observations sur le comportement reproductif et de chasse, et on a donné les mensurations de deux oiseaux piégés. (*Journal of African Raptor Biology* 10 (2): 52-57)

Introduction

The Grey Kestrel *Falco ardosiaceus* is a little-known species resident in lowland tropical savannas of Africa. It ranges from Senegal in West Africa eastwards to Ethiopia, and south to Angola and the extreme north of Namibia (Snow 1978; Brown *et al.* 1982; Maclean 1993). In southern Africa, the Grey Kestrel is recorded reliably only from the extreme north-central parts of Namibia – the Owambo region and north-east Kaokoland, along the Cunene River (Steyn 1982; Maclean 1993; Brown 1993, in press).

There is little published information on the

Grey Kestrel in southern Africa. Specific information is largely restricted to distributional records (e.g. Whiteboon 1964, 1966; Sinclair & Dean 1974; Snow 1978; Brown 1993), while general accounts of the species' biology (e.g. Steyn 1982; Maclean 1993) are drawn mainly from work outside of southern Africa (e.g. Serte 1943; Loosmore 1963; Thillay 1975, 1977). Maclean (1993) states that the Grey Kestrel has not yet been recorded breeding in southern Africa.

This paper reports on incidental observations on the Grey Kestrel in Namibia, including distribution, status, breeding, hunting and mensural

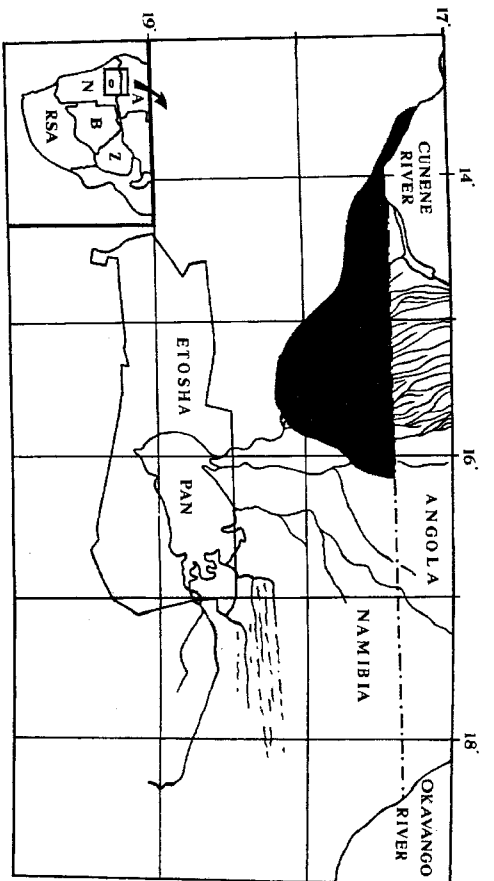


FIGURE 1. The distribution on the Grey Kestrel in Namibia (shaded region).

Distribution

Information on the distribution of the Grey Kestrel in Namibia was obtained from the Namibian Bird Atlas Project, published records and personal observations. This species is confined to the north-central parts of the country (Figure 1), from eastern Kaokoveld in the west (about 13°30'E on the Kunene River) to central Owambo in the east (about 16°15'E on the Angola border) and south to near the Etosha border (about 18°15'S). To the north, the species extends into Angola and beyond (see Brown *et al.* 1982). Records from other areas in Namibia, e.g. the southern Kalahari, Grootfontein area and the Mahango Game Reserve on the Okavango River are not considered reliable and probably refer to the Sooty Falcon *F. concolor* in the first two instances and to Dickinson's Kestrel *F. dickinsoni* in the last.

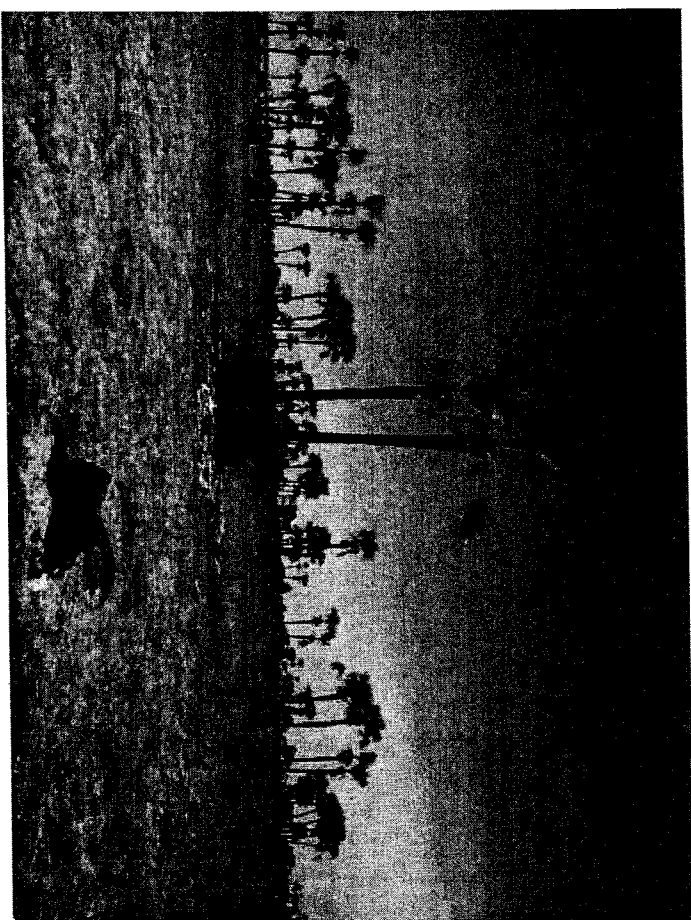
The Grey Kestrel has been recorded from 19 quarter-degree squares and is likely to be found in another six squares. Its range in Namibia (including unsuitable habitat within this range) covers an area of about 15 000 km or 1.8% of Namibia. Suitable habitat within this range is estimated at about 6700 km, about 45% of its Namibian distribution and some 0.8% of Namibia.

Habitat use and status

The distribution of the Grey Kestrel in Namibia is centred on the *Hyphaene ventricola* palm-savanna vegetation type (Figure 2), associated with the ephemeral Cuvélai drainage system that rises in the Angola highlands and ends in the Etosha Pan. The area is characterised by open grassy drainage channels (oshana) lined by scattered palm trees, with mopane *Colophospermum mopane* trees and scrub between the water courses. This small region supports almost 40% of the people of Namibia and the natural vegetation has been dramatically modified by clearing and overgrazing.

Adjacent to the palm-tree savanna, the Grey Kestrel extends into bush savanna and Ruacana woodland (Brown 1993), particularly along drainage lines and in areas where the woody vegetation has been cleared, for example, around homesteads and along the tarred Ondangwa-Ruacana roadway, where a road verge of up to 400 m was kept clear for security purposes during the war of independence in Namibia. The Kestrel extends to the Kunene River, where it occurs sporadically within the river valley from Ruacana falls downstream (westwards) to Swartboois Drift (Whiteboon 1966; Brown 1993).

FIGURE 2. Palm-savanna habitat of the Grey Kestrel in central Owambo, northern Namibia.



A total of 54 records of Grey Kestrels in Namibia indicate that they are resident, being recorded for all months of the year. Nine birds (17%) were recorded for the first quarter of the year, 18 birds (33%) for the second quarter, 16 (30%) for the third quarter and 11 (20%) for the last quarter. While not all these records can be related to observer effort, no seasonal trends are shown by the Namibian bird atlas data and it can therefore be assumed that the birds are at similar densities throughout the year.

The Grey Kestrel is most common in the palm savanna of the Cuvelai, being recorded on 21% of atlas cards for squares where it occurred in this habitat ( $n = 24$  cards). In the bush savanna and Ruacana woodland it occurred on 12% of cards ( $n = 17$ ) for squares from which it is known to occur and along the Cunene River its recording rate was 7% ( $n = 27$  cards).

Distances between sightings of apparently resident (i.e. presumably territorial) pairs within the palm savanna of the Cuvelai system were measured at 9, 11, 13 and 19 km. Assuming a mean inter-pair distance of 13 km for this veg-

etation type, using the above estimates of relative abundance in each vegetation type and the amount of suitable habitat as: palm savanna 4134 km<sup>2</sup>, bush savanna and Ruacana woodland 2184 km<sup>2</sup>, and Cunene River valley 380 km<sup>2</sup> or, perhaps more appropriate, a linear distance of about 95 km, the total estimated population of Grey Kestrels in Namibia is about 31 pairs in the palm savanna, five pairs in the bush savanna and Ruacana woodland, and 2–3 pairs in the Cunene River valley, giving a total population of about 39 pairs.

#### Mensural data

Two Grey Kestrels were captured in the Cuvelai palm savanna and Cunene Valley near Ruacana Falls in September 1993 and July 1996 respectively, using a bal-chari trap and two white mice (Figure 3). The birds were ringed and measured (Table 1) following the procedures recommended by Biggs *et al.* (1978).

Based on figures given by Maclean (1995), the first-captured bird (a) was probably a female. It is larger than Maclean's sample in tail and

tarsus lengths, but, as the method of measurement for Maclean's sample is not known, it is not possible to determine whether the differences are real. The second bird (b) falls within the ranges of both sexes.

#### Breeding

A pair of Grey Kestrels were first seen in the vicinity of a group of *Hyphaene ventricola* palm trees in the Oshikango region of the Cuvelai system in April 1993. One dead tree, which had no foliage, was about 13 m high and was favoured by the birds as a hunting and roosting perch. This tree was about 22 m from an occupied traditional homestead. The birds were frequently seen in this area, particularly in August and September, when they were usually within about 2 km of the dead palm.

On 21 September, one kestrel was seen entering a hole near the top of the dead palm, about 11 m above the ground. On 24 September at about 16h30 both birds were perched near the dead palm. On 24, 27 and the morning of 28 September only one bird was seen on each visit. At about 17h30 on 28 September, one bird flew to the hole and entered, remaining there for at

least 10 min., at which time the observer departed. On 3 October, when attempting to set up a ladder on the roof of a Land Rover to reach the hole, a kestrel flew out and perched on one of the nearby palms. The ladder was too short.

On 5 October a truck with an extendable 8 m arm and a bucket was used to try and reach the hole. The kestrel left the hole to perch on a nearby palm, but again the extension was too short. On 12 October the tree was climbed by a young boy from the settlement. The kestrel left the nest, which was found to contain two eggs and two newly hatched chicks. On 19 October the region received early rains of about 50 mm. On checking the nest the next day, four drowned chicks were found.

The following typical behavioural routine by the kestrels was reported by the local villagers during the breeding attempt. At about sunrise, the male bird leaves the dead palm tree and flies to one of the other palms, where he perches for about an hour. Thereafter the bird leaves the area to hunt, usually returning at mid-morning with food (rodents and small birds reported) and lands on one of the palms nearby the nest tree. After about a minute, the male calls and flies to the

TABLE 1. Mensural information on two Grey Kestrels in good body condition captured in northern Namibia in September 1993 by M. Yates (a) and in July 1996 by B. Brill and S. Braune (b) compared with measurements provided by Maclean (1993). All measurements are in mm unless otherwise stated.

Measurement	Namibia bird (a)	Namibia bird (b)	Maclean (1993) n/sex/min-av.-max
Mass (g)	254.0	225.0	S/M/215-232-250 S/F/195-248-300
Length (cm)	33.0	33.0	30-33
Wing length	244.0	230.0	M/205-232 F/235-251
Total wing length	325.0	320.0	
Wingspan	710.0	689.0	M/128-152 F/150-164
Tail length	170.0	155.0	M/38-45 F/40-47
Tarsus	50.0	42.0	
Bill length	18.2	18.0	
Bill chord	28.0	25.0	
Bill depth	16.0	16.0	
Bill width	13.2	10.9	
Bill height	13.5	13.0	
Tooth depth	6.0	6.5	
Tooth width	5.5	5.0	
Gape length	24.0	23.0	
Gape width	21.2	21.0	
Skull length	54.7	54.0	
Skull width	32.4	32.5	
Shoulder width	60.0	49.0	



nest tree, perches on top and continues to call. The female then leaves the nest and joins the male. She takes the food and flies to a leafless nearby marula tree, where she feeds. Meanwhile, the male bird enters the nest until relieved by the female, which may be in about an hour. Thereafter the male departs once more in search of food, returning in mid to late afternoon, when the pattern of food transfer and the relieving of the female on the nest is repeated. Both birds enter the nest for the night.

#### Hunting behaviour

Of 22 observations of Grey Kestrels considered to be hunting, 19 (86%) were perched, all but one high above the ground, either near the top of a palm tree (16) or from an electric power-line pylon (2). The one exception was a bird on a low *Acacia* bush in a flooded oshana hunting Red-billed Queleas *Quelea quelea* coming to the water to drink. Of the three non-perch-hunting records, two were of birds flying low and fast over the

ground and shallow flooded oshanas, in pursuit of a small group of larks and waders respectively, and one was of a bird circling high over the Ruacana Falls area and diving at small flying birds, including swifts, weavers and unidentified sparrow-sized passerines. Incidental prey items recorded include six insects, two lizards, one small rodent and one sparrow-sized bird.

#### Discussion

We estimate about 39 pairs of Grey Kestrels in Namibia, at a mean inter-pair distance of about 13 km in optimal palm savanna habitat. This is a low density compared to their occurrence in other regions, e.g. in southern Kenya two pairs were 6 km apart and in the Ivory Coast three pairs were found in 2700 ha (Thollay 1975; Brown *et al.* 1985), but this is perhaps to be expected on the extreme edge of the species' range.

The breeding record reported here represents the first for this species in Namibia and south-

ern Africa. Although Brown *et al.* 1982 state that Grey Kestrels are dependent on available Hamerkop *Scopus umbretta* nests in which to breed, it is evident from these observations that they also breed in holes in trees. Holes are abundant in palm trees, and it is expected that the Namibian population of Grey Kestrels is resident and that regular breeding occurs, with egg-laying taking place in August/September, as recorded here and in Angola (Maclean 1993).

While the Grey Kestrel appears to occur throughout its range at relatively low densities, it seems to have benefited from human land-use and forest clearing for agricultural purposes, e.g. in the Ivory Coast (Cade 1982). The Grey Kestrel population in Owambo might similarly have benefited from the deforestation and clearing for agricultural cultivation. If the palm trees, however, are also lost to the area, there will be no suitable nest sites and the kestrel can be expected to retreat.

The observations reported here indicate that there is a small but significant population of Grey Kestrels resident and breeding in northern Namibia, living within the area that supports the highest human population in the country. These birds are poorly known and have been little studied. They are at risk from the destruction of palm trees and should be monitored at regular intervals. They should also be included in Namibia's Red Data Book covering birds. The Grey Kestrel population in Owambo is readily accessible and we hope that this paper stimulates others to follow up and investigate the biology and conservation of this species in more detail.

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