

Is the Hamerkop *Scopus umbretta* a neo-colonist or an opportunist nester?

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Summary

We report two cases of large aggregations of Hamerkop *Scopus umbretta* nests in relatively small areas; the first had a maximum of 639 nests in 2004, all within an area of about 8 km² near to Entebbe, Uganda. However, in recent years there were far fewer nests, with less than a hundred in 2012. The reasons for this decline are unclear. The second site, in Queen Elizabeth National Park, had 56 nests in 2004. There are very few previous records of such gregarious behaviour in this species. Even though a pair may build more than one nest, it implies the presence of a large concentration of birds, which must therefore require rich food sources.

Introduction

The Hamerkop *Scopus umbretta* is generally considered to be a solitary species, although at good feeding places, such as fish-landing sites, it can be gregarious, with occasionally as many as 50 at one place. Similarly, nests are usually found singly, or with two or three together – sometimes in the same tree – since a pair often makes more than one nest (Brown *et al.* 1982, Elliot 1992). Cowles (1930) recorded as many as seven nests built by one pair, but that is exceptional; most pairs build between one and three (Brown *et al.* 1982). Since the massive nests are heavy, probably weighing several hundred kilograms (Kahl 1967), only trees of some strength are suitable.

The behaviour of Hamerkops, and especially their nesting behaviour, has been extensively studied (Brown *et al.* 1982, Elliot 1992) including in Uganda (Kahl 1967). But whilst they all mention the gregarious behaviour of the species, usually at feeding sites, none of these authors described more than one pairs' nests together in one place.

We have been able to find only three reports of aggregations of Hamerkop nests. Wilson & Wilson (1984) in 1978–80 counted 70 nests in an area of about 1.5 km², part of a rice scheme in central Mali. Only 14 of these had eggs laid in them. Various other species made use of the empty nests, including a number of Barn Owls *Tyto alba* and Monitor Lizards *Varanus niloticus*. Smaller groups of nests have been reported by Kopij (2005; three active nests close together) and Van Ee (1977; five pairs on one hectare).

Large aggregations of nests in Uganda

In Uganda, A. Byaruhanda (pers. comm.) reported seeing a large number of Hamerkop nests at Garuga, a peninsula jutting into Lake Victoria some 12 km east of Entebbe (00°04' N, 32°33' E). Between July and October 2004 SK and RJ made a detailed study of this site. They found 639 nests in 483 trees, scattered through an area they calculated at 8 km². Thus in both Uganda and Mali, the loose Hamerkop nest aggregations

had an overall density of about one nest for every two hectares. At a smaller scale, nest density at Garuga varied greatly, with higher concentrations at the edges of the peninsula, and almost no nests towards its centre.

In the meantime, M Behangana (pers. comm.) had also noticed a number of nests adjacent to Kisenyi fishing village (0.53 N, 29.34 E) by Lake Edward, Queen Elizabeth National Park. This site was also visited by SK and RJ in 2004, who recorded 56 nests there.

Garuga is an area of mainly smallholder farms, and most of the nests were close to Lake Victoria. Nesting trees were identified in 2004 as belonging to at least 24 species, with no more than 10% associated with any single species (maximum 52 nests in *Canarium schweinfurthii*). They were supported by up to seven branches, but most (75%) by two or three branches. Some of the nests were very close together (see photograph), but most were scattered. At Kisenyi 42 of the nests were in *Acacia kirkii* near the mouth of the Nyamweru River. One nest was in an *Albizia* sp. and 13 were in trees of unknown species.



Figure 1. A tree with two nests, on the left, and another nest further to the right, show typical spacing.

In 2007 RK made a detailed follow-up count at Garuga and found only 167 nests. In 2009 RS made another count, recording only 136 nests. Further counts in 2011 (O. Mwebe and N. Gardner, pers. comm.) and 2012 (M. Kibuule, pers. comm.) yielded 99 and 97 nests, respectively. Whilst these more recent surveys were less intensive than that of 2004 it is clear that the number of nests has declined substantially, whilst still remaining remarkable. During the years 2004–12 many of the original trees have been cut down and large numbers of *Pinus* sp. were planted. Nevertheless, there are

still many apparently suitable trees without nests, including some not far from the shoreline. There is therefore no reason to believe that the loss of suitable nesting trees has been a decisive factor in the decline in nest numbers.

In all years, a great variety of nesting materials was noted at both sites. In addition to the main bulk made from plant materials, many nests were decorated with pieces of coloured plastic, old clothes including shoes, and bits of fish netting. Seventy-five per cent of nests were between 4 and 8 m above the ground, but sometimes as low as two metres or as high as 13 m. There were rarely more than three nests in any one tree, although in 2004, there were four trees with four nests each, one with five and one with six.

When there were over 600 nests at Garuga, even if each pair had built seven nests (which seems very unlikely) there would have been over 80 pairs, or 240 birds if an average of one young or juvenile per pair is assumed. Clearly there needed to be sufficient food sources nearby. One candidate for this is the extensive shores of Lake Victoria. A second candidate is a number of fish landing sites, including some on nearby islands. Similarly the Kisenyi colony was close to abundant shorelines and a fishing village. Such sites present many opportunities for foraging and scavenging. If there were other plentiful sources of food for Hamerkops they were not obvious.

Discussion

Campbell & Lack (1985) defined coloniality as, "a spatio-temporal clumping of nests" but pointed out that no objective (or widely-accepted) criteria existed as to how clumped nests had to be to constitute a colony. They suggest that where the clumping is less, the term "loose colony" might be used. On the other hand, "loose colony" suggests a habitual, or at least regular, way of nesting, which in the case of the Hamerkop is still to be proven. We therefore prefer to use the expression "loose aggregation of nests".

Hamerkops are widely-distributed in Africa, and being a monotypic family suggests that they are an ancient line. Several related families, such as storks and herons have many colonially-nesting species, which makes it all the more curious that Hamerkops nesting in aggregations, albeit loose ones, is apparently rare and perhaps even a recent phenomenon.

All bird species require food, water, a place to nest, a place to breed, and safe passage between them. They also need freedom from negative factors that would prevent them from successfully using these sources. Colonial nesting can help protect birds from one of those potential negative factors, namely predators. However, colonial nesting can only be successful if there are sufficient food resources close enough to the colony.

In the case of the Hamerkop, a species that is apparently not very particular about which tree species it constructs its large nest, the availability of nesting places does not appear to be a factor that determines density of nesting. Even in the denser parts of the nesting aggregation at Garuga many apparently suitable trees carried no nests (see Fig. 1).

On the other hand, the species has become a common scavenger at fishing villages on the shores of the lakes of Uganda, and along main roads (especially after rain). It is also quite common in suburban Kampala, where it uses the roofs of buildings for territorial announcements.

Our hypothesis is that the Hamerkop is not strongly territorial, at least where food is plentiful. And that the presence of plentiful food and plentiful nesting places can lead to it breeding in loose aggregations rather than singly. It will be interesting to see this hypothesis tested more fully, and to follow further developments in Hamerkop nesting density in Uganda and elsewhere in Africa. Research into the cause or causes of the decline in occupied nests at Garuga would also be useful.

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