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Research Article

Breeding Record of the Hooded Vulture *Necrosyrtes monachus* (Timminek, 1823) at Emi Abumo Woro, Kogi State, Nigeria

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Abstract

Background and Objective: The hooded vulture *Necrosyrtes monachus* is a critically endangered species and recently published evidence suggests that its population is experiencing an extremely rapid decline, owing to indiscriminate poisoning, trade for traditional medicine, hunting, persecution, electrocution, habitat loss and degradation. As a result of these threats, the species is gradually disappearing from its range and thus, the sighting of vultures or their nests is becoming very rare. This paper thus, presents a report on the sighting of the Hooded Vulture and its nest at Emi Abumo Woro Village, Kogi State, Nigeria. This is an evident and equally an indication that Emi Abumo Woro village harbours the remnant of this rare and critically endangered bird species. **Materials and Methods:** Two vultures and a nest were sighted on 3rd March, 2018, during a bird survey of the area. The nest was sighted on a Baobab tree *Adansonia digitata*, located in a fork on the main trunk, at a height above ground of 12.8 m. The nest was accessed using a ladder to determine its content. **Results:** The content of the nest were two eggs, which were photographed. On 17th March, 2018, when the nest was revisited, one of the eggs had disappeared and could not be accounted for. Fifteen other vultures were seen flying within the nest environment. The nest was revisited on 2nd April, 2018 and it was observed that the one remaining egg had been hatched and the vultures had disappeared to an unknown destination. The nest was a statant-cupped shaped nest of large size and the nest materials were mostly sticks and leaves of the nesting tree, which were used in lining the nest. **Conclusion:** This study reveals that the Hooded Vulture still exist in some parts of Nigeria and that Emi Abumo Woro village presents a good breeding site for this vulture. It is therefore very important to take some measures towards conserving the vulture and its breeding site.

Key words: Breeding record, Hooded Vulture, *Necrosyrtes monachus*, Emi Abumo Woro, Kogi State

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Competing Interest: The authors have declared that no competing interest exists.

Data Availability: All relevant data are within the paper and its supporting information files.

INTRODUCTION

The Hooded Vulture is a small, scruffy-looking mostly brown vulture measuring 67-70 cm. It has a long thin bill, bare crown, face and fore neck conspicuously ear-holes and downy nape and hind neck. The sexes are similar/alike and perches are hunched with wings dropping. The juvenile is usually with face pale blue and hood of short down dark brown rather than beige.

The Hooded Vulture is wild spread in sub-saharan Africa and is generally sedentary, with some dispersal by non-breeders and immature birds, and movements in response to rainfall in the Sahel of West Africa¹. The Hooded Vulture is therefore native to Sub-Saharan Africa including Nigeria. The species is often associated with human settlements but is also found in open grassland, forest edge, wooded savanna, desert and along coasts. It occurs up to 4,000 m but is most numerous below 1,800 m. It feeds mainly on carrion but also takes insects and larvae (maggot) from cattle dung. In West Africa and Kenya, it breeds throughout the year but especially from November-July. Breeding in north-east Africa occurs mainly in October-June with birds in Southern Africa tending to breed in May-December. It is an arboreal nester and lays a clutch of one egg. Its incubation period lasts 46-54 days, followed by a fledging period of 80-130 days. Young are dependent on their parents for a further 3-4 months after fledging¹.

The Hooded Vulture *Necrosyrtes monachus* according to IUCN² is a critically endangered species (CR). This vulture has been uplisted to critically endangered status by the International Union Conservation of Nature and Natural Resources (IUCN)². Recently published evidence suggests that the population is experiencing an extremely rapid decline owing to indiscriminate poisoning, trade for traditional medicine, hunting, persecution and electrocution, as well as habitat loss and degradation.

Following evidence of declines across its range, the total population has been estimated at a maximum of 197,000 individuals³. This appears to be the critical population. Recently published data shows that this species' population is declining rapidly, with an estimated 83% decline (range 64-93%) over three generations (53 years)⁴.

The major threats to this species include non-target poisoning, capture for traditional medicine and bush meat⁵ and direct persecution^{3,4}. Across West and Central Africa, the species is one of the most heavily traded, with an estimated 5,850-8,772 individuals traded over a 6 year period in West Africa⁶. Hooded Vulture meat is reportedly sold as chicken in some places and intentional poisoning of vultures

may be carried out in some areas by poachers in order to hide the locations of their kills. Secondary poisoning with carbofuran pesticides at live stock baits being used to poison mammalian predators is also an issue in East Africa^{7,8}. Declines in vulture populations have also been attributed to land conversion through development and improvement to abattoir hygiene and waste disposal in some areas³. The species may also be threatened by avian influenza (H5N1), from which it appears to suffer some mortality and which it probably acquires from feeding on discarded dead poultry⁹. It is well known that Hooded Vultures (*Necrosyrtes monachus*) scavenge for food in refuse dumps and gutters in urban areas^{10,11} thus Hooded Vultures tend to be more abundant in residential areas as compared to non-residential areas¹². In Ghana, the Royal family of the people of Ashanti at Kumasi, value the vulture's scavenging behavior¹²⁻¹⁴. They hold vultures as sacred animals and protect them by law. However, many Ghanaians consider the vulture as a weird, evil and dirty animal¹⁵⁻¹⁷ and along with snakes, spiders, hyenas and sharks are regarded as the bad guys of the animal Kingdom¹⁸. Despite the scorn on vultures, the use of vultures and vulture parts in African traditional medicine has long been reported¹⁹⁻²¹. Vultures have been used both wittingly and unwittingly for food, including mixing of vulture meat with chicken and selling it to unsuspecting individuals^{15-17,22}. The hunting of vultures as a source of animal protein has been to have resulted in the local extinction of vultures outside the National Parks in Ivory Coast/Cote d'Ivoire²² and in Northern Nigeria²³. Similarly, vulture populations are reported to have decreased in Mali and Niger²². High vulture populations are known to be associated with attacks on wildlife and livestock, especially when they are giving birth, damage to property (including aircrafts, high tension power lines and wiper blades of vehicles) and defaecating on lawns and houses²⁴. People using the streets get themselves splashed with vulture faeces in early mornings, late afternoons and at night²⁵. Vultures could therefore be a source of nuisance in this regard. This probably justifies why they are being persecuted. In Nigeria, a survey of medicinal traders found that the Hooded Vulture was the most commonly traded species of vulture, with 90% of all vulture parts traded belonging to the species²⁶. Information from the villagers in Emi Abuno Woro village, attested to the fact that the bird is being hunted for traditional medicine (Pers. Comm.).

Because of these threats, the species is gradually disappearing from its range and thus, the sighting of vultures or their nests is becoming very rare. This paper thus, presents a report on the sighting of the Hooded Vulture and its nest at

Emi Abumo Woro Village, Kogi state, Nigeria. This is an evident and equally an indication that Emi Abumo Woro village harbours the remnant of this rare and critically endangered bird species.

This study reveals that vultures still exist in some parts of Nigeria and that Emi Abumo Woro village presents a good breeding site for the vultures. It is therefore very important to take some measures towards conserving the vultures and their breeding site.

MATERIALS AND METHODS

Study area: Emi Abumo Woro village is located at latitude 06°51'28.1" and 06°51'56.3"N and longitude 07°39'41.8" and 07°40'35.1"E. Emi Abumo Patti where the nest was sighted has the following coordinates 6°52'13"E and 7°40'8"N. Emi Abumo Woro village is found in Bassa Local Government Area of Kogi state in North Central Nigeria. Emi Abumo Patti where the nest was sighted is the old settlement of the Emi Abumo Woro people. They migrated from there to their present settlement over 50 years ago. The area has regenerated into a thick forest with very tall trees, shrubs and grasses as undergrowth. The tree species identified in the area include *Adansonia digitata*, *Anacardium occidentale*, *Magnifera indica*, *Cocos nucifera*, *Daniellia oliveri*, *Azalia entada*, *Cuba pennandra*, *Parkia biglobosa*, *Khaya senegalensis*, *Lofera alata*, Shea butter, *Aguva sisac*, *Gmelina aborea* and *Azadirachta indica*.

The area experiences 2 distinct seasons, the rainy season which commences from April-October, and the dry season which sets in from November-March (Fig. 1).

Nest and vulture observation: The nest and vultures were sighted by visual observation, with the naked eye. A pair of binoculars was further used to view and identify the vulture type. The date on which the nest and vultures were sighted was recorded. The tree species on which the nest was constructed was identified and recorded. With the aid of an Indian Bamboo ladder, the nest was accessed in order to determine its position on the tree, the nest type, the nest content and nest materials. All these were done through visual observation. The height of the nest above the ground was measured using a surveyor's tape. The vultures were identified with the aid of an 8×30 pair of binoculars (Model number 6278) and using the field guide for Birds of Western Africa by Borrow and Demey²⁷. The activities/behaviors of the vultures around the nest were noted.

Eggs: The number (clutch size), colour and size of the eggs were noted.

Determination of nest materials: The nest materials were identified *in-situ* and counted to determine the number of each material used for nest construction.

Photography: A fuji film digital camera Fine Pix A700 was used to photograph the position of the nest on the tree, the nest type, the eggs and the nest materials.

RESULTS

Nest and vulture observation

Nest: The nest was sighted on the 3rd of March, 2018 at Emi Abumo Patti, the old settlement of the Emi Abumo Woro community of Bassa Local Government Area, Kogi state, Nigeria.

The nest was sighted on a Baobab tree (*Adansonia digitata*). The nest was located in a fork on the main trunk of the tree (Plate 1).

The nest was a simple, large size "statant-cupped" type (Plate 2). The height above ground of the nest was 12.8 m.

Vultures: About 2 vultures were sighted on the 3rd of March, 2018. One of the vultures was inside the nest and the other flying around the Baobab tree. On the 17th of March, 2018, 15 other vultures were sighted in a flock/group flying within the nest environment. On the 2nd of April, 2018 when the area was revisited, the vultures had disappeared. The vultures were identified as the Hooded Vultures, *Necrosyrtes monachus*.

Nest content/eggs: The nest contained two eggs when it was sighted on the 3rd of March, 2018. The eggs were of medium size, slightly bigger than the eggs of the Domestic Chicken *Gallus gallus domesticus* and white in colour (Plate 3, 4). On the 17th of March, 2018 when the nest was revisited, one of the two eggs had disappeared and could not be accounted for. Only one was now left in the nest (Plate 5). On the 2nd of April, 2018 when the area was revisited, the remaining one egg had been hatched (Plate 6, 7).

Nest materials: The following nest materials were identified, sorted and counted, branchlets of the nesting tree, sticks, leaves and grasses (Table 1).

Table 1: Nest materials used for the construction of the nest of *Necrosyrtes monachus*

Materials	Abundance
Branchlets	12
Large sticks	8
Small sticks	14
Leaves	12
Grasses	22

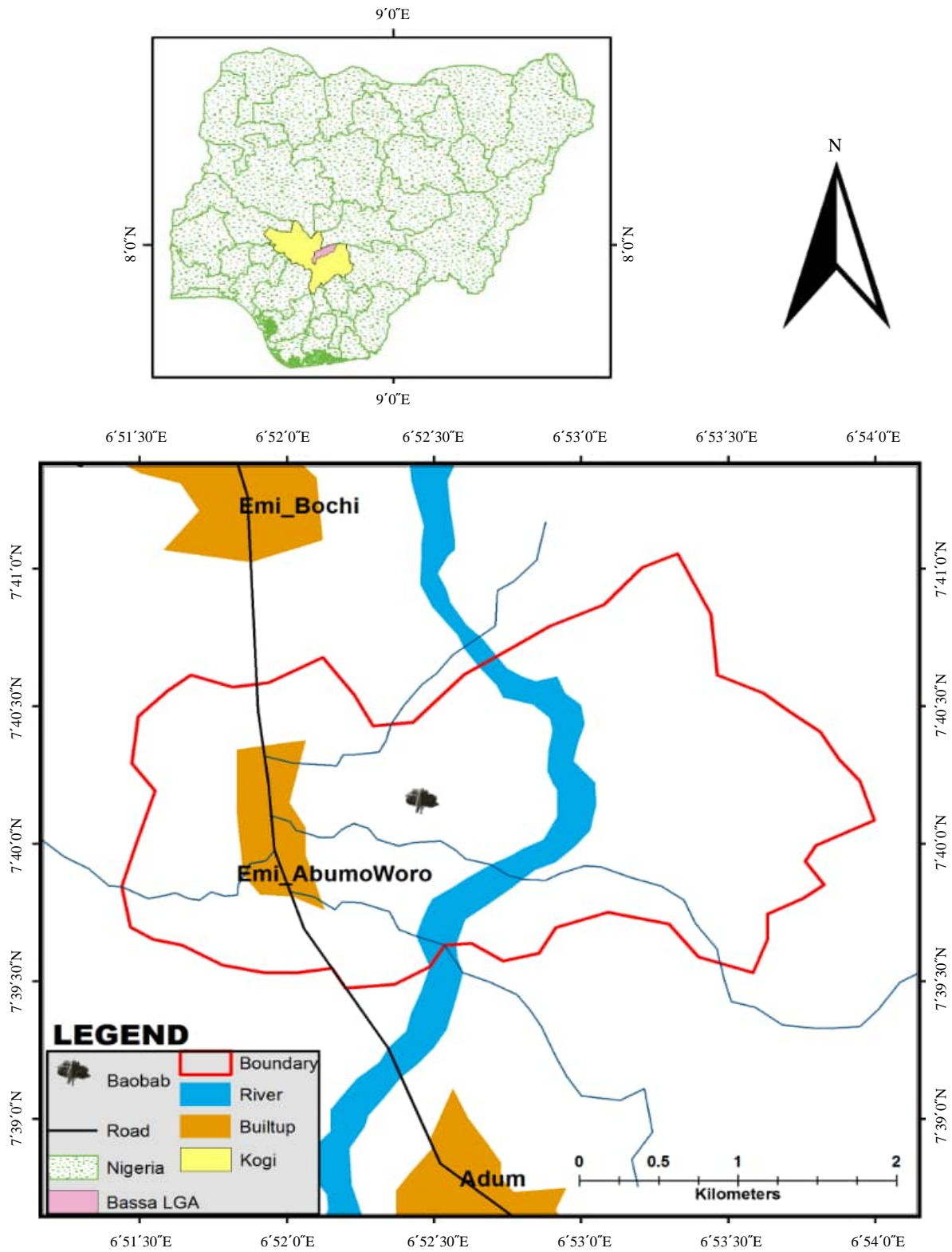


Fig. 1: Map of Emi-Abumo Woro village

Source: By Khadijat Ladi Saliu and Mustapha Abdulkadeer, Federal University Lokoja



Plate 1: *Adansonia digitata* on which the nest was sighted and position of the nest on the tree



Plate 2: The "Statant-Cupped" type nest



Plate 3: Hooded Vulture *Necrosyrtes monachus*



Plate 4: Nest with two eggs



Plate 5: Nest with one egg only



Plate 6: Nest with the shell of the hatched egg



Plate 7: Nesting materials

The branchlets and sticks were used to support the nest, the leaves of the Baobab tree were used to form the base of the nest while the grasses were used for lining the inside of the nest.

DISCUSSION

All the vultures sighted in this study were Hooded Vultures. Grimes²⁸ also reported the vulture community in the Accra plains to comprise entirely of Hooded Vultures. Sighting of vultures are frequently positively correlated with conservation areas^{29,30}. Herremans and Herremans-Tonnoer³¹ reported a greater abundance of vultures at the edge of protected areas than either within or beyond these areas. During the breeding season which span well over half a year, vultures necessarily concentrate their activities around nesting sites¹⁰ like was also observed in the present study.

The sighting of the Hooded Vulture and its nest at Emi Abumo Patti the old settlement of the Emi Abumo Woro community is an indication that vultures are still common in some parts of African wilderness and can be considered to occupy an ecological niche. Thus, investigating the relationship between the distribution of vultures/vulture nests and land use is of vital importance.

The disappearance of the vultures before the end of the study could probably be due to the fact that vultures easily shuttle between various communities based on the availability of food and can move large distances in search of food³².

The sighting of nest in March and April indicates that the Hooded Vulture breeds within this period and this reveals March and April as the breeding season of the species in Emi Abumo Woro village. Elgood *et al.*²³ reported the breeding of this species to occur between October and March, peaking between December and February. Barlow *et al.*³³ reported that Hooded Vultures breed mainly in the dry season which spans from November-March.

The choice of March and April which marks the period of the early rains in Emi Abumo Woro village for breeding by this species is probably linked to the availability of food with which to raise their young. Serle *et al.*³⁴ and Dennis *et al.*³⁵ reported food availability as one of the factors that determine the choice of breeding seasons in birds.

Honolulu³⁶ stated that the species has a brooding period 46 days and that a newly hatched Hooded Vulture fledges at about 120 days. This means that a period of about five months is required for a significant increase to occur in the number of vultures.

In the present study, the Hooded Vulture nest sighted was constructed on a very tall Baobab tree. Vultures according to Mundy *et al.*¹⁰ and Monadjem³⁷ built their nests in tall trees

often in riparian habitats. Barlow *et al.*³³ reported that Hooded Vultures roost in tall trees and in the morning awaits thermals to assist their foraging activities.

The height above ground of the nest observed in this study was 12.8 m. According to Welty and Baptista³⁸, the significance of nest height is difficult to assess as a multiplicity of environmental factors such as microclimate, storm damage, density of foliage, food availability, type of substrate and predator, may affect the height at which a bird chooses to build its nest.

In the present study, the sighted nest was a large "staple-type" nest line with leaves and grasses, built in a fork on the main trunk of a Baobab tree near Emi Abumo Woro village. Serle *et al.*³⁴ however, described the nest of this species as a bulky stick nest lined with twigs and leaves, built in a strong tree fork often near towns and villages.

Serle *et al.*³⁴ reported a clutch size of one egg which is contrary to the clutch size of two eggs reported in the present study.

Serle *et al.*³⁴ described the egg as whit blotched and smeared with various shades of brown with ashy shell marks. This description of the egg is in accordance with the observations of the egg in the present study.

CONCLUSION

This study reveals that the Hooded Vulture still exist in some parts of Nigeria and that Emi Abumo Woro village presents a good breeding site for this vulture. It is therefore very important to take some measures towards conserving the vulture and its breeding site.

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