

PRELIMINARY ASSESSMENT OF THE OCCURRENCE OF THE RED-CAPPED MANGABEY (*CERCOCEBUS TORQUATUS*) IN THE HUMID FORESTS OF SOUTH-WESTERN NIGERIA

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Abstract

This study focused on the preliminary assessment of the occurrence of the Red-capped mangabey (*Cercocebus torquatus*) in the humid forests of South-western Nigeria using a survey of eight forest reserves, one games reserve, and a biosphere reserve. A period of three to five days was spent in each location for data collection. The data for the study was collected through the use of reconnaissance (recce) and market surveys, interview schedules and focus group discussion. A total of 129.9 km transects which ranged from 7 km to 26 km were covered in the protected areas. *C. torquatus* was sighted directly in three protected areas while only calls of the animal were recorded in three sites. One hundred and twenty-one respondents responded to focus group discussions and interview schedules. The majority of these respondents were primarily farmers, hunters, and forestry officials. The interview schedule affirmed the occurrence of *C. torquatus* in all the sampled forest, but only three of these sampled forests showed concluding evidence. Conversely, the sighting of *C. torquatus* was generally low considering the exploration of about 129.9 km and no carcass of *C. torquatus* was recorded during the market survey. The study also revealed over-exploitation of all the forest reserves. There is, therefore, the need to embark on the regional assessment of the population of this species to establish the current status of the animal.

Introduction

The most successful primates are monkeys. There are three main groups of monkeys in Africa – the mangabeys, the columbines, and the guenons. The mangabeys are the most threatened of the three groups of monkeys in the forest environment of Nigeria (Africanwildlife 2010). Two species of mangabeys- the Red-capped mangabey (*Cercocebus torquatus*), and Grey-cheeked mangabeys (*Lophocebus albigena*) have so far been recorded in Nigeria (Africanwildlife, 2010). The animal was once a very common primate species of the forest of the South-west Nigeria (Agbelusi *et al.*, 1999). Over the years, the population of the animal has been drastically reduced as a result of habitat loss (Ogunjemite, *et al.*, 2006) and hunting (Africanwildlife, 2010). More so, most of the endemic and rare species of the region are on the verge of extinction (Manh Ha *et al.*, 2008).

Studies on the population status of *C. torquatus* in the forests of South-western Nigeria are relatively scanty (Person and Werner, 2003) as relevant literature on the animal are limited (Oates *et al.*, 2008, CERCOPAN, 2010).

The species had now been observed to be confined to restricted forest patches in the region (Person and Werner, 2003; Ogunjemite *et al.*, 2006; Oates *et al.*, 2008). The conservation of *C. torquatus* requires a

detailed understanding of their population size, spatial distribution, and demographic trends (Kuhl, and Ancrenaz, 2008), yet, the anthropogenic disturbances resulting in habitat loss and habitat fragmentation have remained the major factors responsible for the disappearing nature of biodiversity and reduction in primate's population in the wild (Ogunjemite, 2006.). Over 70 percent of the human population in Southwestern Nigeria is resident in the rural areas (Ikemeh, 2013) and therefore heavily in need of forest products for survival (Ogunjemite 2006).

C. torquatus is particularly vulnerable to hunting because of its loud calls (vocalization) which give it away to hunters and its large size makes it an easy target for hunters and value as bush meat (Mittermeier and Rylands, 2007). *C. torquatus*, being one of the most prominent species of the region (Struhsaker, 1972, Agbelusi, *et al.*, 1999; Person and Werner 2003) are now heavily hunted in Cameroon and Nigeria as a desirable food source (CERCOPAN, 2010). The species is now listed as vulnerable by the IUCN, (Manh Ha, *et al.*, 2008). This study is initiated in order to assess the occurrence of the *C. torquatus* in the forest of Southwestern Nigeria so as to facilitate its effective conservation and management.

Materials and Methods

Study Sites

The study was conducted in ten protected areas namely, Ise Forest Reserve, Akure-Ofosu forest reserves, Idanre Forest Reserve, Okeluse Forest Reserve, Ise Forest Reserve, Oluwa Forest reserve, Shasha Forest Reserve, Ago-Owu Forest Reserve, Okomu National Park and Omo Biosphere Reserve (Fig. 1). These Forest Reserves, National Park, and Biosphere Reserve are located in Five Sites of Ondo, Osun, Ogun, Ekiti and Edo States which are within the South Western Nigeria eco-zone where the relics of the animals are present.

Vegetation

The southwestern eco-zone comprises a series of ecosystem namely the Guinea forest, Savannah mosaic, Guinea-Congo lowland rain forest and the central African mangroves (Oates *et al*, 2008). However, the predominant habitat type of the area identified as the priority for the survey is the Guinea-

Congo lowland rain forest which is found in the South-western parts of Nigeria (Oates *et al*, 2008). Some of the dominant tree species are *Khaya ivorensis*, *Erythrophleum ivorense*, *Klainedoxa gabunensis*, *Brachystegia eurycoma* and *Terminalia superba* Other than *Terminalia* these trees are often associated with the edge of swamps and this, as well as the soil, indicates that this forest grows in areas that were once freshwater swamp forest and before that mangrove (WWF, 2015),

Climate

The climate of the study area is characterized by a dry season of about 3-4 months and a wet season of 8-9 months. The dry season usually occurs between November and February, while the wet season occurs between March and October. The wettest periods are usually between July and September. The annual rainfall within the region ranges between 1, 500 mm to 2, 500 mm depending on the distance from the coast (Ogunjemite, 2006).

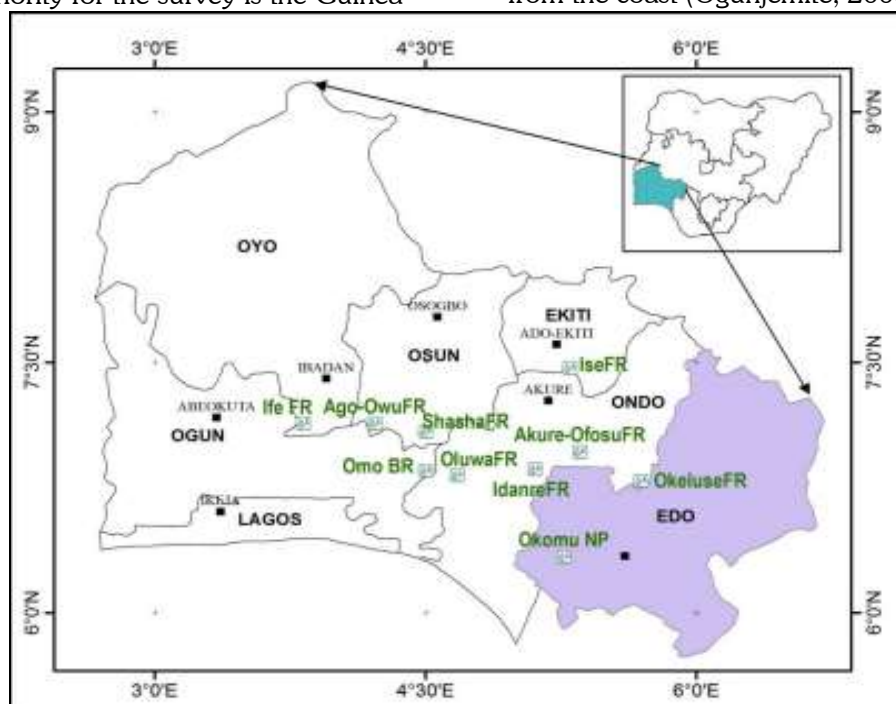


Fig. 1: Map of the study areas

Source: Field Survey, 2015

Method of Data Collection

Ten protected area were visited for between 3 to 5 days for data collection (12/5/2010 and 10/2/2011). Four methods were employed in the data collection. They are Interview schedules, Focus Group Discussion (conservation/forestry staff and other forest users (hunters, farmers, loggers, non-timber forest products (NTFP) collectors), Market and Reconnaissance (recce) surveys.

A structured interview schedule was used in data collection from the respondents randomly selected

within the communities and around the selected protected areas in Edo, Ondo, Ekiti, Osun and Ogun States that were considered to be the range of *C. torquatus* in the Southwestern region (Table 1) using the interview and focus group discussion methods. . A total of 121 respondents were interviewed.

Picture and detailed description of *C. torquatus* were given to the respondents to be sure that they know the animal. Information was also collected by visiting the bush-meat section of the market to see the

animals (killed) displayed for sale. Forest reconnaissance (recce) surveys were also carried out in the sampled forests using hunters' trails and old logging routes where established trails and tracks were not present (Agbelusi, *et al.*, 1999).

The total transects surveyed ranged from of 7 km to 26 km in each of the protected areas. Variation in transects covered within these sites was due to topographical barriers like rocks, rivers, and streams. The Transect was traversed twice daily, with each day covering between 07.00 – 9.00 hours in the

morning and 15 – 17.30 hours in the evening (Aquino, *et al.*, 2013). The adjourning forests were also searched out for primate activities such as feeding signs, nesting sites, and calls. GPS locations of activities were equally taken.

Method of Data analysis

The data collected were analyzed using descriptive statistics such as frequency counts and percentages. The results were displayed in tables and histogram.

Table 1: Status of the Protected Area visited and their sizes

S/N	Protected Areas	State	Status	Size Km ²
1	Okomu National Park	Edo	National Park	212
2	Akure-Ofosu Forest Reserve	Ondo	Forest Reserve	301
3	Oluwa Forest Reserve	Ondo	Forest Reserve	318
4	Omo Biosphere Reserve	Ogun	Biosphere Reserve	45
5	Idanre Forest Reserve	Ondo	Forest Reserve	527.1
6	Ise Forest Reserve	Ekiti	Forest Reserve	45
7	Shasha Forest Reserve	Osun	Forest Reserve	150
8	Okeluse Forest Reserve	Ondo	Forest Reserve	59
9	Ago-Owu Forest Reserve	Osun	Forest Reserve	78
10	Ife Forest Reserve	Osun	Forest Reserve	142

Results

Focus group Discussion and Interview

Table 2 shows the communities and villages where focus group discussion and interviews were

conducted. Forty locations (villages, farm settlements and camps) within and around the protected areas were visited for the interview schedules. Focus Group Discussions (FGD) were held in 18 villages.

Table 2: Communities where Focus Group Discussion and Interviews were conducted

S/N	Reserve Visited	State	Date Visited	Specific Locations/ Villages Visited	FGD Locations
1	Omo Biosphere Reserve	Ogun	12-16/5/2010	J4, Eseke, Orita J4, Erin Camp	J4, Eseke
2	Idanre Forest Reserve	Ondo	08-10/7/2010	Ofosu, Idanre, Jingbe, Idi Araba	Idanre, Jingbe
3	Shasha Forest Reserve	Osun	13-14/7/2010	Odeanmi, Area 4 Camp, Area 5 camp	Area 4
4	Ago-Owu Forest Reserve	Osun	15-17/7/2010	Orile-Owu, Ajebandele, Orita, Kajola, Awosiyan	Orile-Owu, Ajebandele
5	Ife Forest Reserve	Osun	18-20/7/2010	Aluti Erin, Garage Olode	Aluti Erin
6	Ise Forest Reserve	Ekiti	28-31/7/2010	Ise, Ago Panu, Aba Salaja, Aba Oloparun, Uso	Ago Panu, Aba Salaja
7	Okeluse Forest Reserve	Ondo	9 -11/9/2010	Ute, Ajagba, Arimogija, Okeluse, Egbeta	Ute, Okeluse
8	Okomu National Park	Edo	24-28/9/2010	Udo, Iguowan, Arakuwan	Udo, Arakwan
9	Akure-Ofosu Forest Reserve	Ondo	28-30/1/2011	Ala, Aladura, Ago Dada, Tedibomi	Ago Dada
10	Oluwa Forest Reserve	Ondo	10-14/2/2011	Laje, Ulugha, Bature, Adejori, Ogunlepa	Uluagha Adejori, Ogunlepa

Occupational Distribution of the respondents

Figure 2 shows the occupational distribution of the respondents. The majority of the respondents were mostly farmers (31.4%), and hunters (17.4%).

Others respondents include commercial bike (Okada) riders (14.0%), loggers (9.9%), drivers (11.6%), forestry officials (7.4%) and park officials (8.3%).

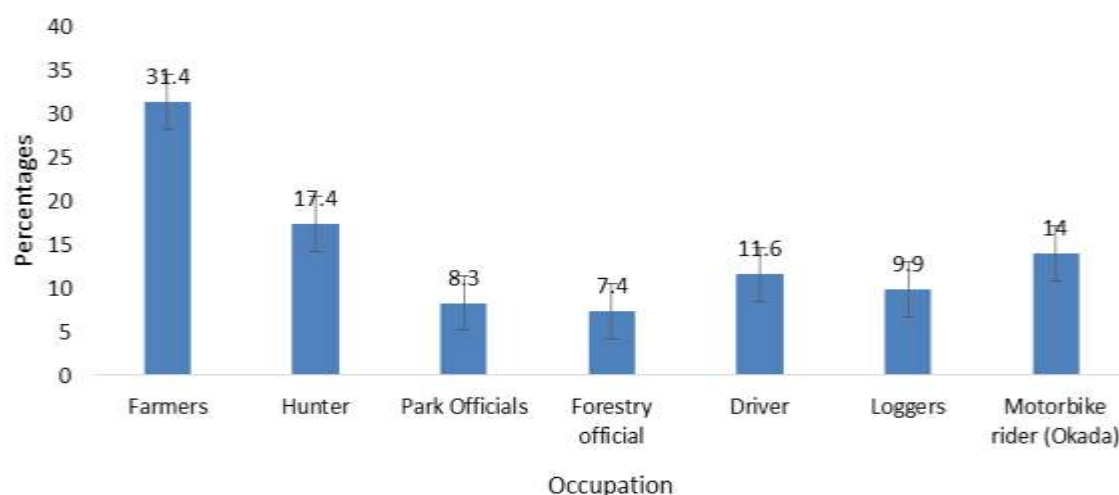


Figure 2: Occupational distribution of respondents

Market and Reconnaissance surveys

Table 4 shows the methods of confirmation of the presence of the animal. Two markets which coincided with the time of the survey were visited around Okeluse Forest reserve and Oluwa Forest reserve and the bush-meat of these markets did not record the carcass of the animal. However, a total of 129.9 Km transects were covered in 10 protected areas. *C. torquatus* were sighted directly in three of

the study sites (Okomu NP, Omo BR, and Idanre F. R) while calls of the animal were recorded in four sites (Okomu NP, Oluwa FR, Idanre FR and Ife F.R). However, neither call nor sighting was recorded in 5 sites (Akure-Ofosu FR, Ise FR, Shasha FR, Okeluse FR, and Ago-Owu FR) but, the presence of the animal was confirmed through interview schedule in all the protected areas.

Table 3: Confirmation Methods of the Animal Presence.

S/N	Forests Visited	Transect Covered (Km)	Animal Status	Mode of confirmation
1	Okomu National Park	13	P	Sighting/Call/Interview
2	Akure-Ofosu Forest Reserve	14	P	Interview
3	Oluwa Forest Reserve	26	P	Call/ Interview
4	Omo Biosphere Reserve	10.4	P	Sighting/ Interview
5	Idanre Forest Reserve	25	P	Sighting/call/ Interview
6	Ise Forest Reserve	9	P	Interview
7	Shasha Forest Reserve	13	P	Interview
8	Okeluse Forest Reserve	-	P	Interview
9	Ago-Owu Forest Reserve	12.5	P	Interview
10	Ife Forest Reserve	7	P	Call/Interview

Discussion

Cercocebus torquatus has experienced more than 50% declines in the population size and area of occupancy in the last three decades with degraded habitat due to anthropogenic activities. Ten protected areas in five states of Ogun, Osun, Ondo, Ekiti, and Edo were sampled for the occurrence of *C. torquatus*. The findings recorded a very low sighting rate of *C. torquatus* in three of the forest sampled

where the animal was sighted. This is contrary to the assertion of Agbelusi *et al.*, (1999) and Person and Werner (2003) that the animal was abundant in their range in South western Nigeria. Although, interview schedule in all the sites visited affirmed the presence of *C. torquatus*, but only three of the forests showed a conclusive evidence. Ogunjemite, *et al.*, (2006) and Oates *et al* (2008) had reported that the species was noticed to be confined to restricted forest

patches in the region of Southwestern Nigeria. However, this study revealed contrary observation. In spite Deleted:wiof the 'protected' status of the forests visited in the range of the animal in the Southwestern Nigeria, Sighting *C. torquatus* was generally low considering the exploration of about 129.9 km. This suggests that little or no conservation was achieved in these protected areas which corroborated the assertion of Greengrass (2008) on the status of protected areas in Southwestern Nigeria. The reason could be that the forests are heavily populated (Ikeme, 2013) with the presence of human exploiters resident in packets of camps, settlements, and villages and around the protected areas (Ogunjemite 2006). These findings seem to cast doubt on the overall wellbeing of the population of this animal in the region and there is therefore, the need to embark on regional assessment of the population of this species to establish the current status of the animal and put forward appropriate techniques in the management of the animal which was once adjudged to be abundant in the region of southwestern Nigeria.

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