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SHORT COMMUNICATION

Conservation Status of Roan Antelope (*Hippotragus equines* Desmarest, 1804) in Old Oyo National Park, Nigeria

**A. J. Adeola¹, E. A. Fajobi, K. O. Babatunde, A. S. Adedeji,
O. A. Akande* and B. J. Emmanuel**

¹Federal College of Wildlife Management, New-Bussa, Niger State, Nigeria

*E-mail address: akandehmd@gmail.com

*Phone Number: 08060763452

ABSTRACT

Continuous monitoring of the size of wildlife population is a basic requirement for proper wildlife management. Therefore, this study assesses the conservation status of Roan antelope in Old Oyo National Park. A reconnaissance survey was carried out to the park to determine the areas of concentration of Roan antelope. The study was carried out for four months (March-June, 2018) using line transect method and direct sighting. The data collected were analyzed using descriptive statistics. The study revealed that the highest population of 34 individuals of roan antelope was recorded in the month of March, while the least population of the roan antelope was 8 in the month of July. Marguba range has the highest percentage of 28.2%, followed by Oyo-Ile with the population of 27%, while Sepeteri and Tede has the population of 22.4% respectively. The population structure of Roan indicates that the female roan antelope had the highest population of 35, followed by the young ones with the population of 27, while the male has the least number of observation of 23. The vegetation distribution revealed that Riparian forest vegetation zone has the highest number of individual with 24 observation, follow by *Isoberlina doka* (23) while *Diospyrus mespilisformis* and *Afzelia africana* recorded 19 respectively. The population of roan antelope could then build up to sustain the effective breeding

population size. Uncontrolled burning activities by poachers and variations in seasons changed the habitat of Roan Antelope and this has threatened most of the plant species that provide shelter and food for the animals. It was therefore recommended that the vegetation types should be protected from adverse late burning by poachers as this is necessary for saving the vegetation for dry season feeding of roan antelope.

Keyword: Conservation, Status, Roan Antelope, *Hippotragus equines*, Old Oyo National Park

1. INTRODUCTION

The Roan antelope (*Hippotragus equines*) is a savanna antelope found in the West Central, East and Southern Africa. It is the name sake of the Chevaline project, whose name was taken from the French Antelope Chevaline (O'Reagain, 1999). Roan antelope are one of the largest species of antelope. They measure 190-240 cm (75-94 in) from the head to the base of tail and the tail measures 37-48 cm (15-19 in). The body mass of males is 242-300 kg (534-661 lb) and of females is 223-280 kg (492-617 lb). The shoulder of this species is typically around 130-140 cm (51-55 in). According to Arkive.org (2011), roan antelope is named after its reddish brown roan colour. They have lighter underbellies, white eyebrows and cheeks and black faces, lighter in females. They have short, erect manes, very light beards and prominent red nostrils. The horns are ringed and can reach a metre long in males, slightly shorter in females. They arch backward slightly. They are similar in appearance to the sable antelope and can be confused where their ranges overlap. Sable antelope males are black darker, being black rather than dark brown. Roan antelope are found in woodland and grassland savanna, mainly in the tropical and subtropical grasslands, savannas, and shrub lands biome, which range in tree density from forest with a grassy understory (such as central Zambezian Miombo woodlands) to grasslands dotted with few trees, where they eat mid-length grasses.

The species is fairly widely distributed throughout the continent in sub-Saharan savannah habitat, but at a finer scale shows a patchy and discontinuous distribution (Bodenstein *et al.*, 2000). They form harem groups of five to 15 animals with a dominant male. Roan antelope commonly fight among themselves for dominance of their herd, brandishing their horns while both animals are on their knees. The roan antelope endemic to Africa was formerly one of Africa's most widely distributed antelopes found especially throughout the African savannas, where water was adequate (Drescher *et al.*, 2006). However, today they occur in small scattered groups over most of their range in the savannas of Africa (Flagstad *et al.*, 2000). In some areas of Africa, large local populations of roan antelope still exist, but their numbers have decreased dramatically over the past few decades due, primarily, to the pressures of commercial hunting and epizootic diseases (De Vos, 2000; Allendorf, 2007), and habitat disturbances (Happold, 1995).

Although the roans are currently classified by the IUCN (IUCN 2008) as of "Least Concern, but if the present trends continue, the roan antelope's status may eventually decline to threatened status as it disappears from large parts of its current range due to poaching and loss of habitat to the expansion of settlement. It is worth noting that in 1996 the same species was listed in the IUCN red list, as threatened and its survival dependent on active conservation measures. The roan antelope distribution range is now drastically reduced throughout Africa and the species is faced with the risk of extinction (Capellini and Gosling, 2007). Completion

of this research work and implementation of its findings will reveal the conservation strategies in managing the population of roan antelope and promote quick population recovery. It is necessary to know the recent population and conservation status of roan antelope, because it is one of the fauna that are of more valves to the human needs, so as to protect, conserve, and utilize them in a sustainable way and protect the animal from being threatened.

2. MATERIALS AND METHODS

2. 1. Description of the study area

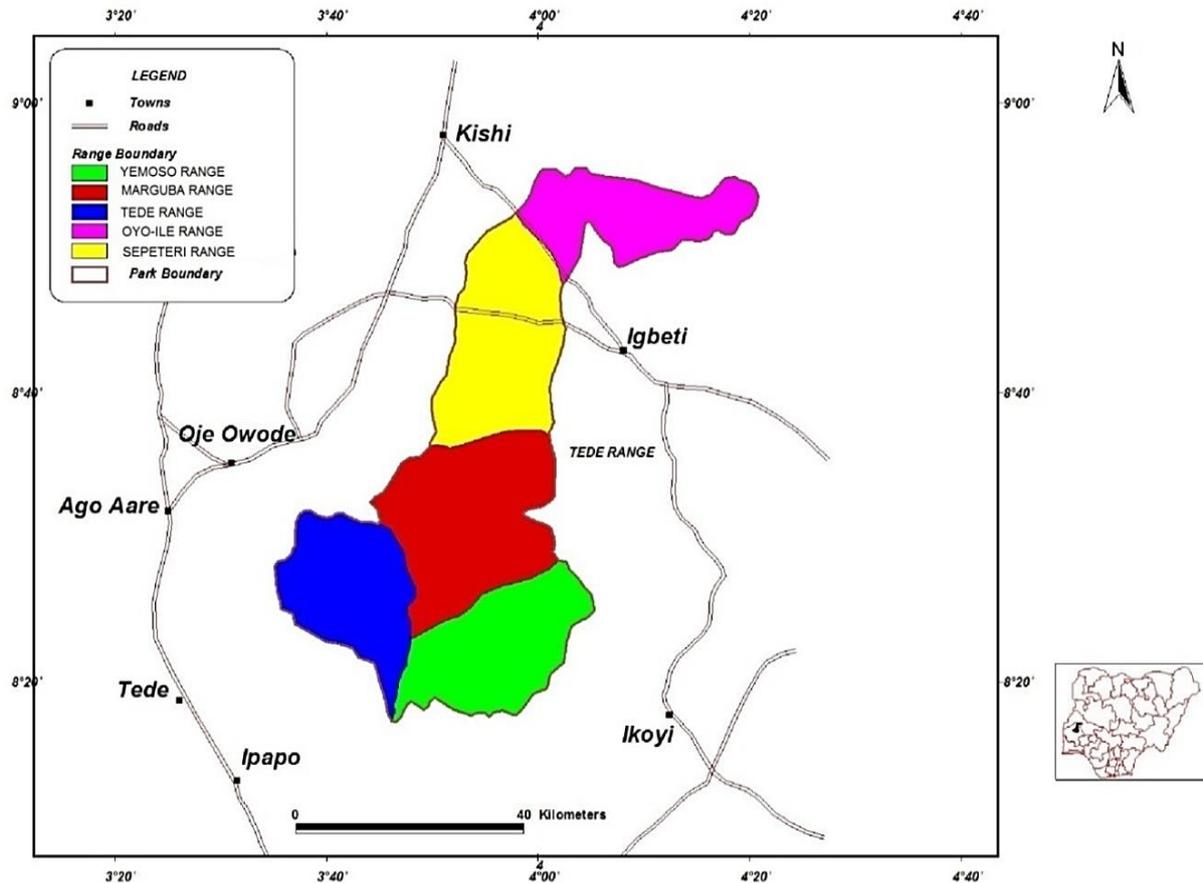


Figure 1. Map showing Old Oyo National Park

Old Oyo National Park is one of the Oldest conservation area in Nigeria and indeed the West African sub region having been designated upper Ogun Forest Reserve in 1936, converted to Oyo-Ile Forest Reserve in 1941 and designated Game Reserve in 1952. The sources potentials and the rich cultural and biological diversities informed the Federal Government, decision to elevate the reserve to the status of a National Park by decree No 36 of 1991. It is based on the ruins of the Old capital of Oyo Empire located in the Northern part of present day Oyo state. The park is situated in the heart land of commerce industry and culture and is in close proximity to Ibadan, Lagos, Akure and other cities. It has a total land area of about 2,512 km²

and average rainfall of 1,100 mm/year. The park lies between 8015” and 9000N and Longitude 3035”-4042”E. The vast guinea savannah ecotype with luxuriant grass, browse plants species and water supports grazing of ungulates. Unfortunately, this very attributes in vegetation also attracts cattle rearer who encroaches on the park annually; illegal grazing of livestock has therefore become the greatest problem confronting the management of Old Oyo National Park, an act that was prohibited by section 30 of Decree 36 of 1991.

2. 2. Method of data collection

The study was carried out for five months (March-July, 2018), direct sighting and line transect method using the existing jeep tracks were used. The location was transversed in the morning between (07:00 and 10:00 a.m) and in the evening (15:00 to 18:00 hours). The data was analyzed using descriptive statistic through the use of tables, frequency and chart.

3. RESULTS

Table 1, shows the spatial distribution of Roan Antelope (*Hippotragus equinus*) in the study area. The highest population of 34 individuals of roan antelope was recorded in the month of March, while the least population of the roan antelope was 8 in the month of July. Marguba range has the highest percentage of 28.2%, followed by Oyo-Ile with the population of 27%, while Sepeteri and Tede has the population of 22.4% respectively.

Table 1. Spatial Distribution of Roan Antelope in Old Oyo National Park.

RANGE	MARCH	APRIL	MAY	JUNE	JULY	TOTAL	PERCENTAGE (%)
Marguba	10	6	4	2	2	24	28.2
Sepeteri	8	4	3	2	2	19	22.4
Tede	8	4	3	2	2	19	22.4
Oyo-Ile	8	7	3	3	2	23	27.0
TOTAL	34	21	13	9	8	85	100.0

Source (field survey, 2018)

The population structure of Roan Antelope of Roan Antelope is shown in Table 2 which indicates that the female roan antelope had the highest population of 35, followed by the young ones with the population of 27, while the male has the least number of observation of 23.

The vegetation distribution of Roan Antelope in Old Oyo National Park is reveal in Table 3, it was reveal that Riparian forest vegetation zone has the highest number of individual with 24 observation, follow by *Isobertina doka* (23) while *Diospyrus mespilisformis* and *Azelia africana* recorded 19 respectively.

Table 2. Population Structure of Roan Antelope in the Study Area (March-July)

TRACK	MALE	FEMALE	YOUNG	TOTAL
Marguba	9	8	7	24
Sepeteri	5	8	6	19
Tede	4	9	6	19
Oyo-Ile	5	10	8	23
TOTAL	23	35	27	85

Source (field survey, 2018)

Table 3. Roan Antelope (*Hippotragus equinnus*) Vegetation Distribution in the Study Area

TRACK	TOTAL NUMBER OF ANIMAL SIGHTED	VEGETATION TYPE
Marguba	24	Riparian forest
Sepeteri	19	<i>Diospyrus mespillisformis</i>
Tede	19	<i>Azelia africana</i>
Oyo-Ile	23	<i>Isoberlina doka</i>
TOTAL	85	

Source (field survey, 2018)

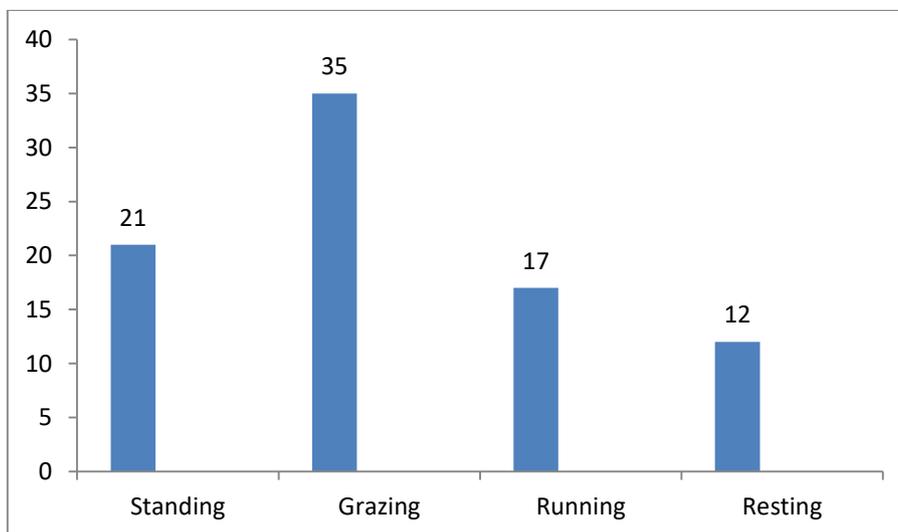


Fig. 2. Activities of Roan Antelope in the study area.

The Fig 2 indicates the activities of Roan Antelope whereby grazing has the highest population of 25, standing has 21, running has 17, while resting has the least population of 12. This shows that most of the roan antelope are grazing when sighting, while few of them were on resting.

4. DISCUSSION

A total of 85 observation of Roan antelope was sighted in this study. The month of March recorded the highest population of observation with 34 individuals, while the month of July is the least with 8 observation. This must have been as a result of the visibility of the area. But the highest population of 28.2% of Roan Antelope during the study was recorded on Marguba track (transect) which is a Riparian forest, while the lowest population of 22.4% individuals was sighted in Sepeteri and Tede track (transect), which consists of *Azelia Africana* and *Diospyrus mespilliformis*. This result indicates that the vegetation in Marguba track has all the attributes for the basic survival of Roan Antelope due to availability of food resources and closeness to water source this is in agreement with (Jansen *et al.*, 2001), who asserted that habitat quality and quantity have been identified as the primary limiting factors that influence animal population dynamics. Musila *et al.*, (2001) also confirmed that habitat influences the presence abundance, distribution, movement and behaviours of game animals. Determining the relevant factors may be difficult since one is constrain to define habitats according to features which can be recognized and measured. Habitat types are however usually taken to correspond to vegetation communities. Secondly, utilization of smaller patches differing only in relative productivity may be investigated.

Arditi and Dacorogna, (1988) also revealed utilization of several habitat types may be influenced by factors other than food availability. Despite high incidence of debarked trees in rocky outcrop savanna this habitat type was never preferred by the study animals. Devilliers (1992) stated that other uncontrolled Roan antelope may have monopolized this area or this habitat may be unsuitable for feeding on important subterranean food items such as tubers and tree roots, because of the rocky substratum. Majority of the animal were sighted in the month of March. This correlate with findings of IUCN (2008) which confirms that the animal is more sighted during the dry season, the distribution pattern of Roan antelope in the park indicates the animal can be found in all parts of the park but predominant at Marguba track that recorded high population density. The population structure of Roan antelope included male, female and young. Out of 85 individuals sampled 23, 35 and 27 respectively are male, female and young respectively. It was generally observed that female and young constituted higher population of the population structures which are in agreement with work of Sitati *et al.*, (2003). This is an indication that the animal has the potential to maintain and sustains its population potential in the near future, provided various illegal human activities in the park are addressed. The ever green forest along the Ibuya pool which do not dried up completely in the dry season provide all the necessary ecological requirements for the animals especially during the dry season, thereby, attracting ungulates species and other wild animals in the park. Daily activities of Roan antelope shows that grazing is the major activities that the animal is engage on during the study period. They equally engaged there self in other activities such as standing, running and resting/lying down.

5. CONCLUSION

The remaining population of Roan Antelope (*Hippotragus equinus*) in the park needs to be adequately protected and conserved so that the species will not be totally eradicated. The population of roan antelope could then build up to sustain the effective breeding population size. Uncontrolled burning activities by poachers and variations in seasons changed the habitat of Roan Antelope. This has threatened most of the plant species that provide shelter and food for the animals. Marguba track (transect) had the highest population and contained mixed vegetation of Riparian and *Detarium macrocarpum* woodland.

Recommendation

The following recommendations are made in order to ensure optimum conservation of habitat and Roan Antelope survival in the park:

- 1) The vegetation types should be protected from adverse late burning by poachers as this is necessary for saving the vegetation for dry season feeding of roan antelope.
- 2) Provision of water holes in the upland areas of the park is highly recommended.
- 3) The boundaries of the park should be clearly demarcated and developed as vehicle tracks necessary for anti-patrols.
- 4) Initiate an effective data collection scheme for the research unit of the park so that animal distribution map can be drawn regularly.
- 5) Initiate long term study to assess the effect of continued hunting, grazing and fire on roan antelope populations and suggest ways to reduce any negative effects.
- 6) Roan antelope is a species that attracts tourists to the park and should therefore be given total protection along with other mammals to enhance biodiversity conservation.
- 7) Improve the effectiveness of anti-poaching measures of the park.
- 8) Public enlightenment education should be carried out.
- 9) Wildlife inventory should be carried out at intervals of 5 years to assess the carrying capacity of the park.

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