



Full Length Research Paper

Seasonal Variation in Herd Size of Roan Antelope (*Hippotragus equinus*, Desmarest 1804) in Kainji Lake National Park, Nigeria

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Accepted 01 August, 2012

This paper examined the seasonal variation in herd size of Roan Antelope in Borgu Sector of Kainji Lake National Park (KLNP). In the wet season months of May, June and July; the average numbers of 49, 38 and 31 Roans were recorded. While in the dry season months of April, January and March and December; the average numbers of 79, 57, 56 and 53 Roans were recorded. Herd size of 2 – 5 dominated with 64% in the first year of study. In the second year of study, the 2-5 herd size dominated with 63%. The study showed that in the first year the 6-10 and 2-5 with 42 and 38% dominated. In the second year the 6-10 and 2-5 dominated with 41 and 38 %. The herd sizes of 16 – 20 and 21+ were represented by 2.0% respectively. Therefore in KLNP, herd sizes of 2 – 5 are commonly seen in the wet season while the 6 – 10 and 2 – 5 are mostly seen in the dry season.

Keywords: Seasonal Variation, Herd Size, Roan Antelope, Borgu Sector

INTRODUCTION

Herd size is the number of animals of the same kind that eat, move and live together in a park on a yearly basis. The average herd size is the total population of animals encountered divisible by the number of herd observed on seasonal basis (Fischer and Linsemair, 2001). The magnitude of changes in herd sizes in season is an indication of increase, decrease or stability in productivity of an animal. Roan antelope associate in herds of up to thirty five individuals though herd sizes of 6 – 15 are more common. These herds are composed of a single, dominant male and a group of females and their young (Wildlife Africa, 2001). Female herds are accompanied by a single adult male, who defends a wide swath (300 –

500 meters) around his herd against potential rivals. Young males are driven from their natal herds when they reach 2.5 years of age. In the dry season, males join herds of females and young (IEA, 1998). A dominant female tend to be the leader of the herds. During the mating season, adult males do not form individual territories; instead they remain in the herds even though there is mild conflict between some males. The effect of season on herd size composition of Roan antelope has been reported by Henshaw (1975) and Agbelusi (1996). The availability of food and water usually changes with seasons particularly in the tropical, temperate and arctic regions, so food may be plentiful in one season and critically short in another. Water can affect Wildlife indirectly through changes in habitat (Shaw, 1985).

The aim of the study was to investigate the herd size of Roan Antelope In the wet and dry seasons in Kainji Lake National Park.

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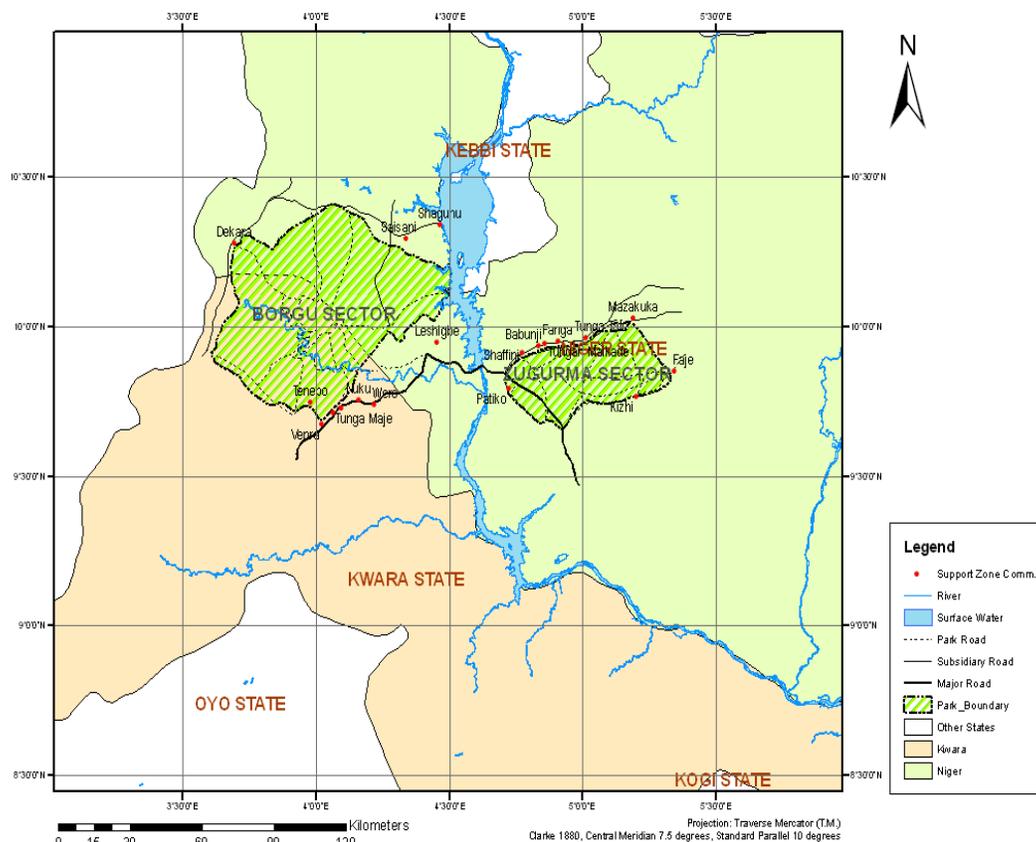


Figure 1. Map of Kainji Lake National Park showing Borgu and Zugurma Sectors.
Source: Tuna (1992)

MATERIALS AND METHODS

Study Area

The study was conducted in Borgu sector of Kainji Lake National Park which covers an area of 3,970.02 km². The park is located at the boundary between the Sudan and the Northern Guinea Savanna (Keay, 1959) and lies between latitude 9° 40' and 9° 23'N and longitude 3° 40' (Figure 1).

Methods

The study adopted a modified line transect count method by Agbelusi (1996) using tracks as transects. Ten tracks were randomly selected and used for the survey. Observations were made on the population of Roan antelope from a Hilux pick up van. Binoculars were used to aid in determining the number, Herd size, sex and relative age structure of groups of animals encountered. The vegetation types where animals have been sighted were all recorded in a standard data collection sheet. Surveys were made between 07.00 hrs – 11.00 hrs and

16.00 hrs – 18.00 hrs GMT Monthly from May 2007 – April 2009, thus spanning two wet seasons (May – October) and two dry seasons (November – April).

Data Analysis

Data collected were pooled together into months and season and analyzed using simple descriptive statistics; frequencies and percentages and presented in Bar chart.

RESULTS

The result on wet and dry season herd size of Roan Antelope were presented in Figures 2, 3 and 4. The results on the average yearly population of Roan Antelope were presented Figure 2. The result showed that the highest number of Roans was 49 in May, followed by 38 and 31 in the months of June and July. In the months of August, October and September; 22, 19 and 14 Roans were recorded respectively in the wet season. In the dry season; the months of April, January,

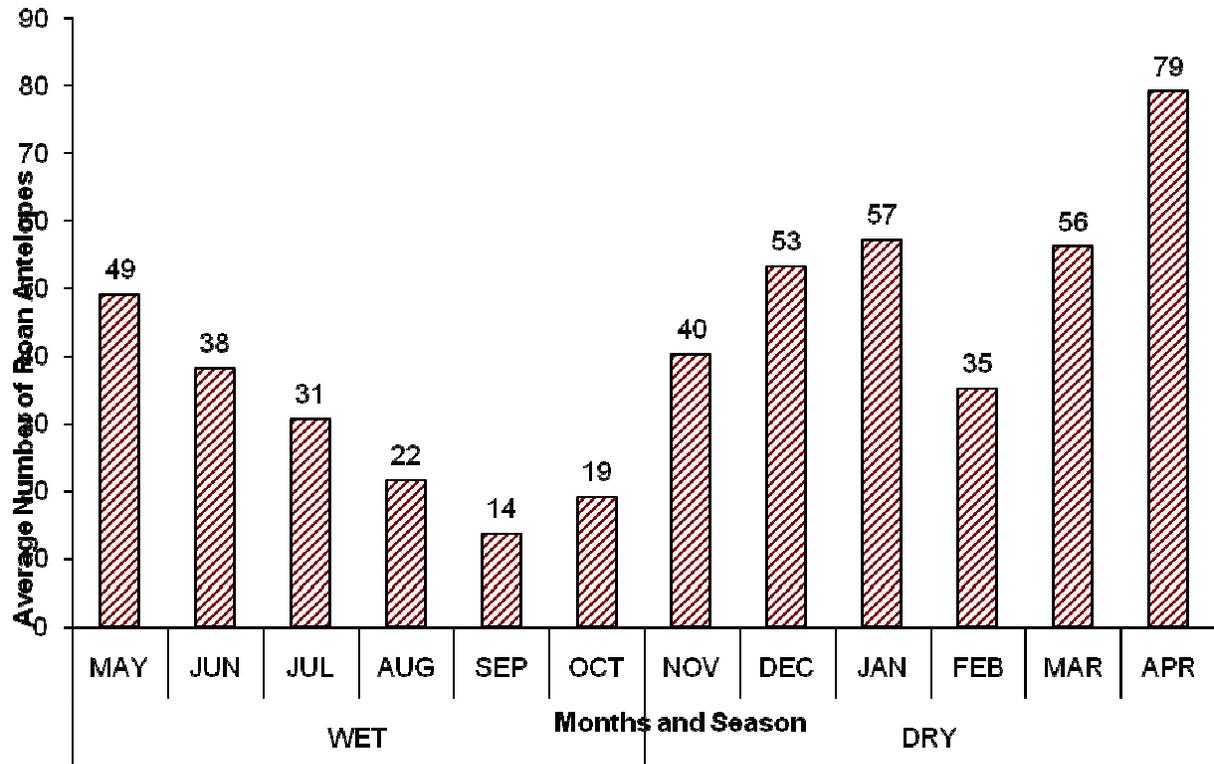


Figure 2. Average Yearly Population Distribution of Roan Antelope in Wet and Dry Seasons at KLNPN

March and December recorded 79, 57 and 56 and 53 Roans respectively. The months of November and February recorded 40 and 35 Roans each.

The result on frequency (%) distribution of herd size in the wet season was presented in Figure 3. The 2 – 5 herd sizes had the highest % of 64. This was followed by the 6 – 10 herd size. The single (1) herd size recorded 13% while the other herd sizes recorded 0 in the wet season of the study in the first year of observation. In the second year, a similar trend was observed in which the 2-5 herd size had 63%.The single (1) herd size had 22%.While the 6-10 and 11-15 had 10 and 5 % respectively. The herd sizes of 16-20 and +21 had 0. The result in Figure 4 in the first year of study showed that in the dry season, the 6-10 herd size had 42%. The 6-10 herd size had 38%, while the 11-15, 16-20 and 21+ recorded 5, 2, 2 % each respectively. In the second year, the 6-10 had 41%.The 2-5 recorded 38%.The single (1) herd size had 10%. The 11-15 herd size had 6%. The 16-20 and 21+ had 2% each.

DISCUSSION

The result presented in Figure 2 depicts that in the wet season of the study, more Roans were sighted in the early months of May, June and July. As the rains

progresses in the months of August, September and October which is the peak of wet season, the number of Roan was observed to decrease due to difficulty in visibility as a result of the fast growth of vegetation cover. In the dry season, there was a tremendous record of Roans especially in the months of April and January. The reason for the high number of Roans could be as a result of clearer visibility of the area, the search for food resources and migratory movement for protection against poachers. The low records observed for the month of February was as a result of high activity of Poachers. There were so many arrests in this month by the park protection unit. Shaw (1985) asserted to the fact that the availability of food and water changes with season particularly in the tropical, temperate and arctic regions of the world affect animals. He further reported that food may be plenty in one season and critically short in another and that water affects wildlife indirectly through changes in habitat. The result on wet season herd size of Roan presented in Figure 3 clearly showed that in the first and second year of study, the 2-5 herd size recorded the highest % of 64 and 63 respectively. The herd sizes of 16-20 and 21+ were not observed in this period of study. The result in Figure 4 presented also revealed that in the first and second year of study, the herd sizes of 6-10 and 2-5 clearly dominated compared to other herd sizes. The distinguishing fact is that the herd sizes of 16-

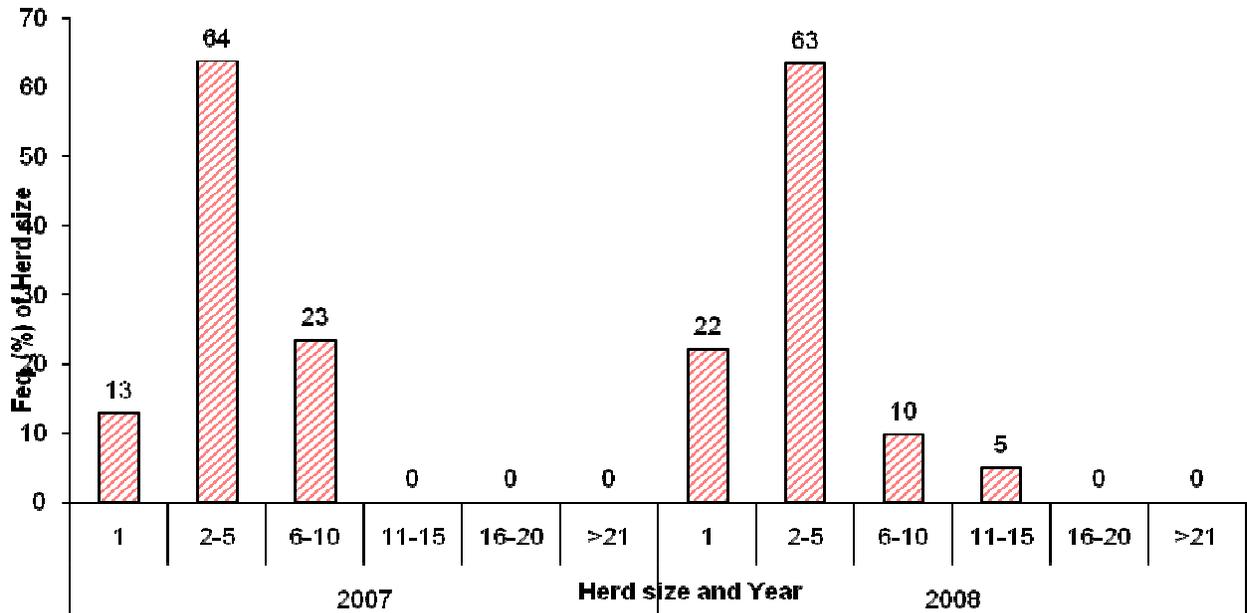


Figure 3. Freq (%) Distribution of Herd size of Roan Antelope at KLNP in Wet Season

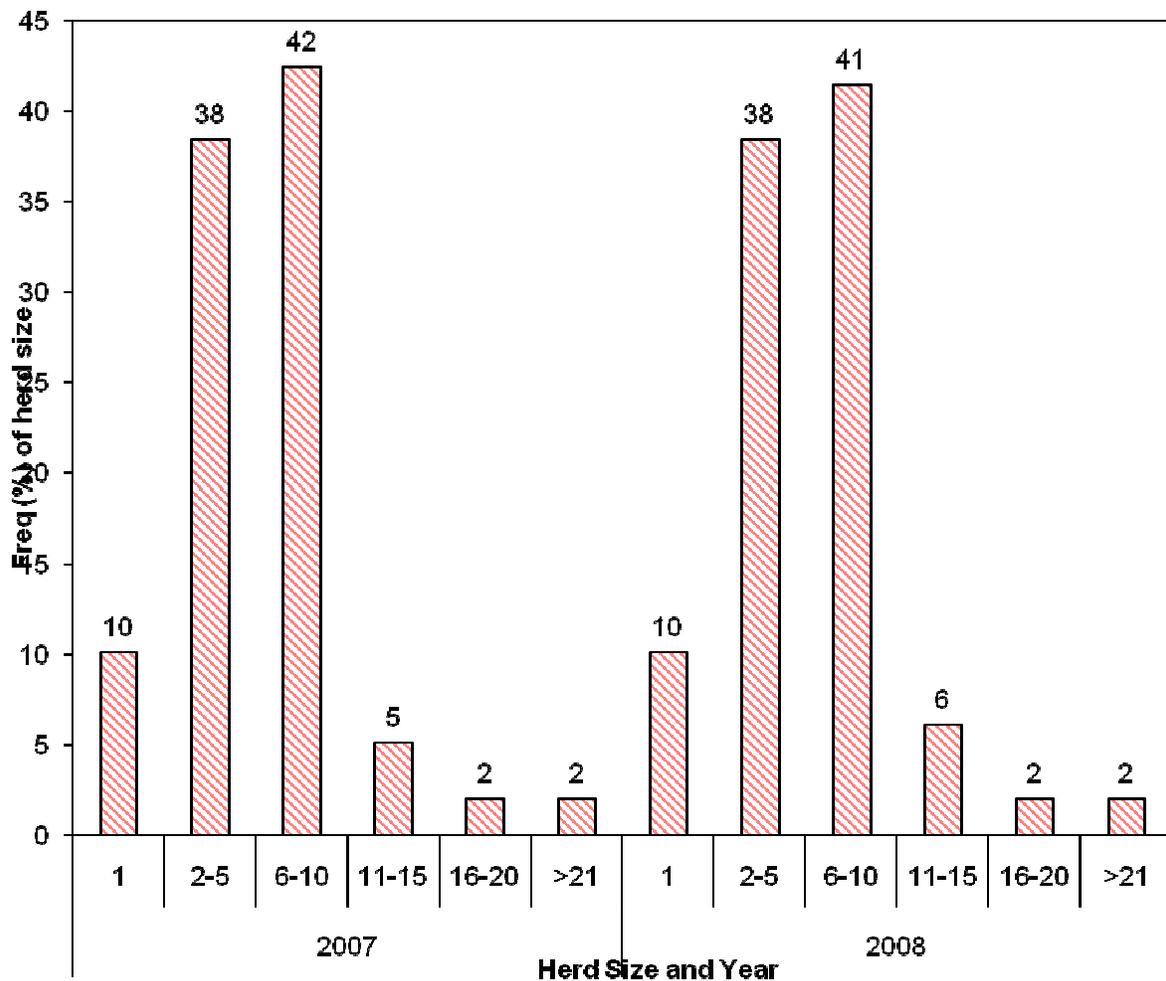


Figure 4. Freq (%) Distribution of Herd size of Roan Antelope at KLNP in the Dry Season

20 and 21+ were recorded in the dry season. The frequency of each herd varies from year to year and is probably related to cover and availability of food. Herds may be larger in the dry season, especially in the riparian than in the wet season. Herds are composed of either males and females, or young males, or females and young. The composition of herds changes throughout the year; in the dry season, males join herds of females and young, and the females tend to be leaders of the herds. Solitary individuals are either non-breeding males or females. Agbelusi (1996) and Wildlife Africa (2001) reported in their findings that large sizes of antelopes consist of more than two families coming together during the dry season to form a large herd. They further stated that it is for the protection of young calves and also an indication of habitat change.

CONCLUSION

The study concludes that in the Borgu sector of Kainji Lake National Park, herd size of 2-5 is commonly seen in the wet season (May – October), While in the dry season (November - April), herd sizes of 6-10 and 2-5 are frequently seen in the dry season. The large herd sizes of 16 – 20 and 21+ can only be sighted in the dry season.

ACKNOWLEDGEMENTS

I thank my supervisors; E. A. Agbelusi and T.A. Afolayan for their various advice, encouragement and guidance

throughout the stages of the study. I am highly indebted to the Conservator General National Park Service Abuja, Nigeria for approving that this research be conducted at the study site. Finally I appreciate the tireless efforts of the technical assistants of the park staff which includes: George Vincent, Haruna Musa, Jimoh A. and Okon J.

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