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Ballpark Population of Hippopotamus (*Hippopotamus amphibius*) in Kiri Dam, Shelleng Local Government Area, Adamawa State, Nigeria

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BALLPARK POPULATION OF HIPPOPOTAMUS (*HIPPOPOTAMUS AMPHIBIUS*) IN KIRI DAM, SHELENG LOCAL GOVERNMENT AREA, ADAMAWA STATE, NIGERIA

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ABSTRACT: A study on estimated population of hippopotamus in Babbandaba, Tallum and Bobere villages neighbouring Kiri dam was conducted, data were collected by direct observation and count of hippopotamus by using a 4km range binoculars. The observations were made from 5am-7am and 4pm-6pm daily on the grazing areas and in waters at particular periods for 13 successive weeks, the average daily count was then recorded. The result obtained indicates that the population of hippopotamus in Babbandaba is highest with a mean population of 10.385, observed over a period of 13 weeks. Statistically the result shows that, the population of hippos in the three communities shows a significant difference ($P < 0.05$) in population size of in Babbandaba and the two other communities, while no significant difference ($P > 0.05$) exist between Tallum and Bobere. These can be concluded that Babbandaba village had the highest number of Hippopotamus.

Keywords: Herbivores, watercourses, counting, distribution, abundance farmlands

1. INTRODUCTION

Hippopotamus is a Greek word and it means RiverHorse. The Hippopotamus is a large, herbivorous animal and have very heavily built artiodactyls with short stumpy legs. It is the third largest and third heaviest land animal in the world. According to the IUNC Red list, there has been a 7 to 20% decline in hippopotamus populations over the past 10 years (Lewison and Oliver (2008)). It was estimated that in the 29 countries within its geographic range, there are only between 125,000 to 148,000 individuals (Lewison (2007)). Although hunting and exploitation of hippopotami are illegal, it remains the main reason for declines in populations. This exploitation is most commonly found in areas where hippo populations are on unprotected land. Habitat loss is another reason for population declines. Hippopotami rely heavily on freshwater bodies, making them vulnerable to drought, agricultural and industrial development, and rerouting of natural water flows. There are few conservation efforts aimed at protecting hippo habitat and

populations specifically. Countries where hippopotami are most common have strict hunting regulations and protected habitats, including national parks, and reserves (Lewison and Oliver, 2008). The effects of hippopotami population on the support zone communities will help to increase the understanding of the importance of this wildlife species and ecological consequences they might have on their immediate environment with a view of advocating for a more effective conservation strategy for hippopotami. All animals interact with their immediate environment and these interactions could be beneficial or harmful or both.

Proper understanding of the interaction of the animals' visa vis the perceived benefits or harm done to the environment by the animal will affect the value placed on such animal and the perception of the immediate environment for such animal (Anderson and Pariela, 2005). The hippo is considered vulnerable according to the International Union for Conservation of Nature (IUCN) Red List, and the population has declined since

the 1990s (Lewison and Oliver, 2008). The IUCN Hippo Specialist Group has found three primary threats to the common hippo; conflict with humans over preferred areas, export of hippo teeth, and poaching. Despite inadequate research, IUCN stated that the issue of poaching has increased in later years, often because of food shortage in combination with human conflicts and declined law enforcement. However, they conclude that poaching is of the least concern out of the three primary threats (Wengström, 2009), and this is supported by Lewison (2007), who found in simulations that the biggest threat to hippos is loss of habitat, due to the damming of rivers, especially in conjunction with droughts. Humans are not only a threat to hippos; hippos are also a threat to humans. In Uganda between 1923 to 1994 about 636 (33.5%) casualties were reported as result of hippos and others large herbivores were responsible. The study reported that hippos killed 86.7 % of the humans they attacked, making them more dangerous than lions, elephants, and leopards (Treves and Naughton-Treves, 1999). Hippopotami are central place foragers that contribute to faster depletion of feeding sites close to their shelter (Mduma et al., 1999; Sinclair et al., 2000). The general aim of this study was to consider the hippopotamus population in Kiri Dam.

2. MATERIALS AND METHODS

2.1 The Study Area

Kiri Dam is in Shelleng Local Government Area of Adamawa State. It is located at latitude 9.6797°N and longitude 12.014°E (Figure 1). The dam was completed in 1982. The reservoir has a capacity of 615 million m³ Salau, (1986). Kiri Dam; the river Gongola was dammed at Kiri under the auspices of the upper Benue River Basin Development Authority. Salau (1986) reports that the construction of the Dam displaced over twenty thousand people. The Dam was constructed in 1982, at Kiri, some Kilometres away up streams of its confluences with river Benue at Numan. The Dam land area is 134km². Just like most Dams in Nigeria, its main aim is for providing water for irrigation and fishery. Sunshine; January to April has a mean monthly sunshine hour of 220; however, between May and September, there is a decline to about 207 dues to increasing cloudiness all over the state. Between October and December mean sunshine hours increase again to 225. Thus, the number of sunshine hours ranges from 2500 in the south to 3000 hours per annum in the extreme north. There is therefore a general increase in sunshine hour from the south to the north, minimum temperature can be as low as 18°C from December-January while maximum temperature can reach 40°C around April Average monthly temperature ranges from 26°C in the south to 27.8°C in the Eastern part. There is low relative humidity (20-30%) between January and March, in April it starts increasing until it reaches the peak (about 80%) in August and September due to air mass (Adebayo and Tukur, 1999). Include: People living there and their livelihoods; vegetation; other animals found there.

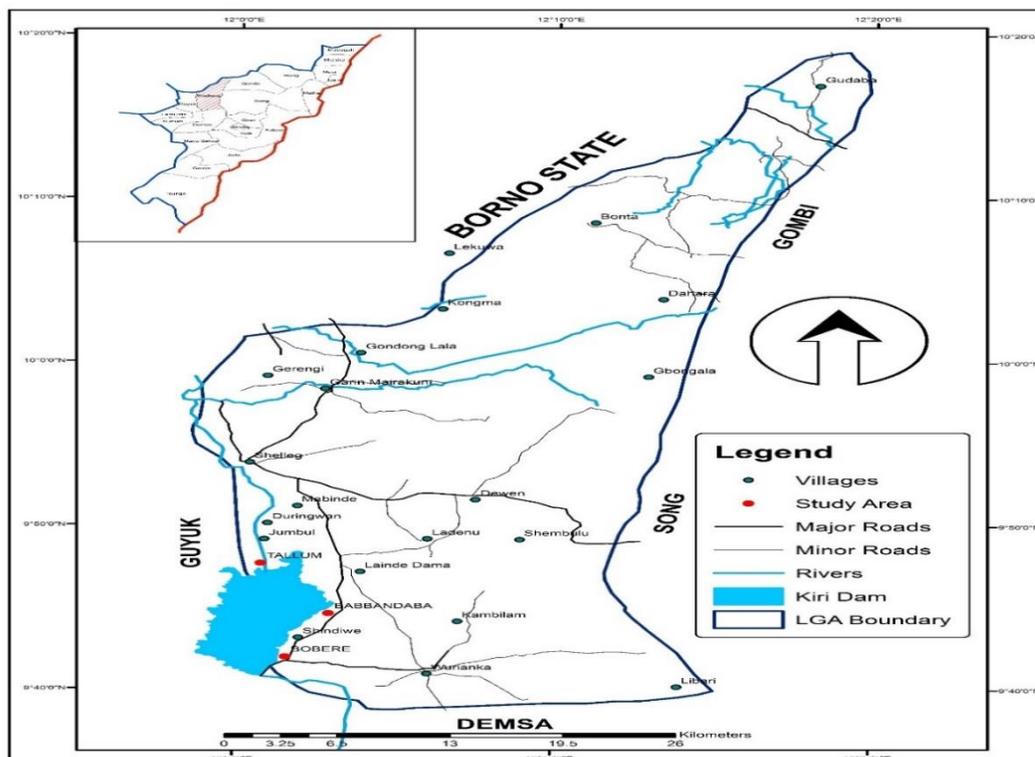


Figure 1. Map of Shelleng Showing the Study Area
Source: SKAS Consult, 2016

2.2. Data collection

Preliminary studies were conducted at Kiri Dam environs to locate the specific grazing areas of the hippopotamus. Three communities Babbandaba, Tallum and Bobere were purposively selected because they are strategically located around the dam and have unique characters in terms of usage of the dam.

Data on estimated population of hippopotamus in the three village areas namely Babbandaba, Tallum and Bobere were collected by Total count; the technique involves counting of a species in an area. Total count was applicable in study site that are confined or the area to be covered is not too large (Robertson, 1994), this was done by direct observation of hippopotamus by using a 4km range binoculars. The observations were made from 5am-7am and 4pm-6pm daily because hippos come out early to the land in the morning to graze and return to water before coming out again in the evening to graze on the grazing areas and in waters at particular periods, where one by one count was done repeatedly for 13 successive weeks.

The population variations in the three communities were then evaluated using one-way analysis of variance (SAS., 2000).

3. RESULT AND DISCUSSION

Table 1 Average Population of Hippopotamus in the Study Area

Community	Average Population
Babbandaba	10.385±1.91
Tallum	3.000±0.73
Bobere	2.615±0.81

3.1. Hippopotamus Population in the Study Area

Results of observed population of hippopotamus in the study area is presented in Table 1. The result indicates that the population of hippopotamus in Babbandaba is highest with a mean population of 10.385, observed over a period of 13 weeks. The results of the one-way Analysis of Variance (ANOVA) of the population of hippos in the three communities shows that there is significant difference ($P<0.05$) in population size of hippo in Babbandaba and the two other communities, while no significant difference ($P>0.05$) exist between Tallum and Bobere.

Hippos scarcely had any natural predators and are not particularly susceptible to diseases; however, the species is potentially vulnerable because of its specialised ecological requirements, as hippos cannot cope with drying up of watercourses or loss of grazing grounds (Eltringham 1993a). The result of the survey of hippopotamus abundance and distribution varied with communities and hippopotamus pool. This finding agrees with the reports of Onyeanus (2001)

who observed that the variations in abundance and drift in the distribution range of hippopotamus are consequent upon a number of factors such as hunting pressure, water depth at various seasons and water current. There was a higher preponderance of hippopotamus in Babbandaba community than any of the study community and these population was significantly ($P<0.05$) higher than the population in the two other communities. The higher preponderance in Babbandaba community may not be unconnected with the favourable habitat requirements offered by the Dam in terms of abundance of water throughout the year in which the hippos can spend the day and vast grazing land for its foraging movement at night in Babbandaba. This is in line with the finding of Shefferly (2001) that the preferred habitat of the hippopotamus is deep water with adjacent reed beds and grasslands. However, the population of hippo is on the declining path as people may have hunted hippos in order to obtain meat and trophies. Apart from man, hippos have few enemies.

Addressing hippo related problems requires knowledge of their behaviour on a daily or seasonal basis. Animal response to the presence of physical forces in its habitat, such as weather conditions, space, social pressure from the herd, and availability of food. In the wet season for instance, the abundance of food makes for less competition (Laws, 1989). The hippopotamus-feeding pattern was investigated; it was found that hippos in the study community raided farms most frequently during the months of July to September (Responses from Field Survey). It seems the hippos have a peculiar attitude of destructing farm during the raining/planting season. But by the time farm produce have been harvested, their activity became minimal. It is also possible that the respondents seem to be more mindful of hippo presence during the farming/raining season and feel more of their presence during the farming seasons.

4. CONCLUSION

From the results of this study, the following conclusions can be drawn;

1. The study provided useful information on the status of Hippo in Kiri Dam
2. The study also revealed the destructive activities of these Hippos, which discourage farmers to farm close to the Dam, more awareness should be created by state government.
3. The Wildlife Department of ministry of environment in Adamawa State should create awareness on the need to conserve Hippopotamus and educate the people on conservation in general.
4. Non-Governmental Organizations (NGOs) should join hands with governmental institution to properly monitor the population of hippopotamus, to avoid extinction.

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