Human-baboon conflicts inside protected areas, some glance from Kingupira Camp, Selous Game Reserve, Tanzania

Samuel Mtoka, Kelvin Ngongolo and Anna Mahulu

1Tanzania Wildlife Research Institute, Kingupira Wildlife Research Centre, Box 16, Utete-Rufiji, Tanzania
2University of Dar-es-Salaam, Box 35064, Dar-es-Salaam, Tanzania

(Received:16-6-14) (Accepted:8-7-14)

ABSTRACT

The need in addressing the human-wildlife conflict is becoming more and more vital. Little work on the subject has been done inside protected areas than the periphery and other more human-wildlife interaction areas. The Yellow baboons (Papio cynocephalus) in Kingupira sector, Selous Game Reserve are among animal species found abundantly. With human settlements inside the reserve, some of the Baboons live proximity to humans, competing with humans for resources which results into conflicts. The conflict threatens the human-baboon coexistence as baboon are perceived as pests, vermin and nuisance instead of part of the wildlife community and ecosystem functioning. We studied the human-baboon interactions in the area through evaluating the distances from baboons to people’s houses, time spent by baboons in each distance category and attitude of people in the Kingupira camp toward baboons. Five categories of distance from houses were set. The number of individual baboons and time spend in each categories were determined. High proportion were observed to spent much time in the distance of 0-10m and >60m due to difference in resources found in the different distances. The attitude of people towards Baboon was negative. The camp residents were advised to equip themselves with techniques and practice that are none lethal in dealing with baboons so as to maintain the co-existence and the role of education on the subject was emphasized.

Key words: Human-wildlife conflicts, Human-baboon conflict, Yellow Baboons, Co-existence, Kingupira sector, Selous Game Reserve

INTRODUCTION

Human-wildlife conflicts are becoming more and more of concerns currently than the past because of increasing in human population, shrinking and insolation of wildlife areas that lead to more interactions between human and wildlife. Despite all over the history, conflicts has been the main feature of the humans and wildlife interface [4], the current situation has been worsened by last three centuries alteration of the world landscapes by humans [3]. The conflicts are detrimental that lead to injury and loss of life to humans and wildlife, as well as property and ecosystem damage. The Human-wildlife conflicts threaten conservation of biodiversity that in turn may impair ecosystem functioning.

The policy and law for protected areas in Tanzania strictly restrict human activities and settlements in game reserves and national parks. The human-wildlife conflicts have been studied mostly for communities adjacent to protected areas and in other wildlife areas where the law allows community activities, such as grazing in them, for example Ngorongoro Conservation Area and Game Controlled Areas [7,9]. There is scarce information for human-wildlife conflict...
conflicts inside game reserves and national parks where only management staffs and tour operators live for easing administrative and management activities.

The Yellow baboon (*Papio cynocephalus*) is an African old world monkey, found in south-central and eastern parts of the continent belonging to family Cercopithecidae. The species inhabits thorn scrub, savanna, open woodland, and gallery forests in all over its range. It is omnivorous feeding to the wide range of food stuffs although with selection and may be an opportunistic eater, taking in anything that come across especially during food shortage. The species successful adaptation has caused competition with humans and hence considered a pest in many areas. Raiding crops and infringing human settlements, have caused exterminations projects to the species and other baboons. For example in Kalunga rubber plantation Morogoro, Yellow baboons were killed and eliminated in the plantation because of the loss they caused in the rubber production of pouring down the collected latex in the containers. Yellow baboons were more problematic than other primates that are Iringa Red colobus, Black and white colobus monkey, Sykes monkey and Velvet monkey where few individuals of these species are still surviving in the plantation (Personal observation).

In Cape Town, South Africa, Yellow baboons have been observed to steal things in the houses and cars. This has caused the conflict to rise between the communities and the baboons. There has been some efforts to mitigate this conflict among them is to prevent the attractants like food and water in the inhabited areas.

The Human-baboon conflict dominates the Human-wildlife conflicts inside the game reserves and national parks (Personal observation). In Kingupira sector, Selous Game Reserve some Yellow baboons live near the human camps. The camps are residential area for Ministry of Natural Resource and Tourism (Wildlife division and Tanzania Wildlife Research Institute) workers that are responsible for management, administration and research activities in the reserve. Also there are health and education staffs. There has been a complaint for sometime from the camp residents that, Yellow baboons are becoming problematic animals, however there had been no study done to follow up complains.

This study looked at the Human-baboon conflicts in Kingupira camp, Kingupira sector, North East Selous Game Reserve. To address the subject, we aimed at determining the relationship between distance from houses and the human-baboon conflict in Kingupira camp. Specifically we intended to determine the proportion of Yellow baboon individuals spent at different distance from the houses, assess attitude of people on Yellow baboon, and determine the area most preferred by the Yellow baboon troop in Kingupira camp.

**MATERIALS AND METHODS**

**Study area**

The study was conducted in the Kingupira camp, North Eastern Sector, Selous Game Reserve that is located at 7°20' to 10°30'S and 36°00' to 38°40'E. Kingupira sector is located at about 65km from Utete town and is among of the eight sectors found in the Selous Game Reserve [6]. The Selous Game Reserve (SGR), a World Heritage Site since 1982, is among the largest game reserves in the world and in Africa with about 55,000 km² [Wildlife Division, 2003]. The reserve has numerous species of mammals, birds, reptiles, amphibians, and invertebrates. The major activities taking place within the reserve is anti-poaching patrol and tourism activities.

The camp was divided into three places namely Sector Senior official houses area (SOA), Air strip area (ASA) and Kingupira Wildlife Research Centre houses area (KWA). These three places were frequently visited by one Baboon troop.

**Method**

The Baboon troop was tracked from 0800hrs to 1700hrs in SOA, ASA and KWA areas, in September 2013. The search began by going to the location that the Baboons were left previous day or searching in the three areas (SOA, ASA and KWA) that the Baboon troop is known to frequent. Upon sighting the troop, the troop structure that is age and sex of individuals was recorded, except sex for young ones that was difficult to determine. Total counting of individuals in the troop was carried out and a pair of binocular aided the vision. We only observed animals and no handling of the animal was conducted. The people's houses in the Kingupira camp were considered inhabited area. The distance from the houses (inhabited area) were divided into seven categories that is 0-10m, 10-20m, 20-30m, 30-40m, 40-50m, 50-60m and >60m. A group scan of 10 minutes was done, where number of individuals in

http://www.journalzbr.com/issues.html
different distance categories was counted. The variation in time spent among the three sites, variation of proportion of individuals spent in different distance categories and variation of cases of baboon in the camp were tested using Kruskal-Wallis Test at $\alpha=0.05$. The difference in time spent between the studies sites were determined using Mann-Whitney U test at $\alpha=0.05$.

An interview was conducted to the people living in Kingupira camp to determine any problems encountered by baboons. A total of 45 adult residents in the Kingupira camp were randomly selected and interviewed on their perception toward baboons.

**RESULTS**

*Baboon troop structure*

The troop followed in Kingupira was observed to have 18 individuals, where 2 were adult males, 5 adult females, 6 sub-adults, 3 juveniles and 2 infants. The troop population structure represented all age groups and both sex. The adult male-female ratio was 0.4 and the adult female-infant ratio was 2.5. The general body conditions for majority of the individuals were good, despite the dry season.

*Locations of Baboons in relation to the inhabited area*

The baboons appeared used to humans as they hang close to the houses. Out of 68 observations, 1211 frequencies of individuals observed was made (Mean= 17.809±0.073, S.D=0.605) with Skewness (G1) of -2.395, maximum of 19.000 and range of 3.000. The proportion of individuals located in different distances from the inhabited varied. About 48.78% were observed to be in the distance of at least 60m from the inhabited area, 26.75% were located in 0-10m from the inhabited area, where none were observed in the distance of 50-60 (Table 1). Kruskal-Wallis One-Way Analysis of Variance showed that, there was a significant different in the proportion of individual located in different distance from the inhabited area (Kruskal-Wallis Test Statistic = 112.598, $P < 0.005$).

| Table 1. Individual locations in different distance from the inhabited area |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|                             | Minimum | Maximum | Mean | Std. Error | Skewness (G1) |
| 0-10m                       | 0.000   | 17.000  | 4.765| 0.785      | 0.957          |
| 10-20m                      | 0.000   | 17.000  | 2.132| 0.433      | 2.207          |
| 20-30m                      | 0.000   | 17.000  | 2.309| 0.595      | 2.047          |
| 30-40m                      | 0.000   | 17.000  | 0.544| 0.320      | 5.178          |
| 40-50m                      | 0.000   | 17.000  | 0.441| 0.316      | 6.046          |
| 50-60m                      | 0.000   | 17.000  | 0.000| 0.000      | 0.309          |
| >60m                        | 0.000   | 17.000  | 0.000| 0.000      | 0.000          |

Descriptive statistics N=68

A total of 682 minute equivalent to 11 hours and 22 minutes (Mean=10.029 ±0.029, S.D=0.243 Minutes) were used to observe the baboons during the study. They spent much time in SOA (290min, Mean=10.000 ±0.000, S.D=0.000 Minutes N=29), followed by ASA area (212Mins, mean=10.095 ±0.095, S.D=0.436 Minutes N=21) while least time were spent in KWA area (180, Mean=10 ±0.000, S.D=0.000MinutesN=18). However the difference was not statistically significant (Kruskal-Wallis Test Statistic = 2.238, $P>0.005$) also see Table 2.

| Table 2: The difference in time spent between the study places |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Comparison between | U   | P   | N   | Comments |
| ASA Vs SOA               | 319.000 | >0.05 | 50  | *          |
| KWA Vs SOA               | 252.000 | >0.05 | 46  | *          |
| ASA Vs KWA               | 187.000 | >0.05 | 38  | *          |

*Mann-Whitney U test, where U=Mann-Whitney U test, P=Probability value, N=number of cases, *not significant, **=significant and ***extremely significant*

*Attitude of people on the baboons*

In all 45 respondents, 95% said that, baboons are problematic in the area. They complained that baboons steal food and water, also defecate inside the houses and damage some properties example TV dishes and may take away some domestic utensils especially those with food or remains of food. Stealing took place when the doors and windows are open especially to those windows which are not baboon proof. The respondents suggested that Baboons should be culled to minimize their impact.
DISCUSSION

Yellow Baboons in Kingupira like other places have co-existence with people who are living in the camp for sometimes. However the relationship between humans and the baboons is finicky. For instance, people are observed to chase and scare the baboons when they come close to their houses and baboons steal food and damage properties.

Baboon troop structure

The troop followed had 18 individuals that composed of all age groups and both sex. Baboons are reported to live in groups of 8 to 200 individuals, for example a study done by [2], found the baboons troop ranges from 18 to 80 individuals. Different group sizes provide advantages and disadvantages to individuals. Large groups provide protection against predators, which is an advantage but the drawback is competition for food, the small group will have the opposite advantage and disadvantage. Most individuals appeared to be in good body conditions. The good conditions for majority of the individuals in the group despite the dry season can be possibly explained by the fact that this troop scavenges foods in human settlements to meet their dietary need easily than searching in the nature.

Location of Baboons in relation to the inhabited area

The distance of above 60m and 0-10m from the inhabited area were observed to have high proportion of baboons than other distances. Possibly, this is due to the environmental resources that are most critical to baboons, [8] pointed out that, the major environmental requirement for baboon are water, food and sleeping place. In Kingupira, the baboons were observed to sleep in the distance beyond 60m possibly to avoid disturbance from the humans. However longer time spend in the inhabited area suggest that, the food and water especially during the dry season were the major attractions to them. The high food availability in the camp is due to the food remains thrown in the rubbish pits and the opportunistic stealing from the houses.

Time spent in the three sites

The time spent by baboons in the three sites was not significantly different which explain that, possibly there was less similarity in the resources provided by the three sites for baboons. All three sites were observed to be close to the houses. This suggests that, the baboons had equal opportunity of finding their basic resources (food and water) in these areas. In South Africa, baboons were observed to live in the town due to their flexibility and adaptation to live in different habitats and environmental conditions. However with influence of human like feeding, and poor garbage disposal have attracted more baboons with unnatural evolution of stealing and invading people and properties in the residential areas thus leading to baboon-human conflict [1].

Attitude of people on baboons

The attitude of people toward baboons is negative. The pessimistic attitude of people to the baboons is due to the menace they cause to their properties. During the study we observed baboons stealing people’s properties inside the houses through doors and windows, also drunk and spoiled water in the containers. In addition baboons in Kingupira were observed to open the doors the practice that was not observed before year 2010 (Personal observation). The windows the baboon use to enter were not baboon proof, doors were not locked with keys and some food materials were observed thrown in the pits, these all attracted and enabled baboons to steal from the camp residents. However [1] pointed out the techniques for dealing with baboons, one of them was that, a person should never feed the baboons and never try to grab back food or anything else the animal has taken in the house as it will become aggressive and fight for it.

In Kingupira, people were observed chasing baboons once they take their foods in pans and hotpots. This act has the potential to trigger Baboons to attack if cornered to the position that it has to defend its catch [1]. The Baboons attack may cause personal injury and increase the negative attitude toward them.

Conclusion and recommendation

Man and baboons are both primates, but one is more advanced than the other. The one who is superior should show his distinguished superiority not by using energy but brain. People in Kingupira should realize that the baboon have to exist in this area, hence there is a need to find ways of dealing with them in a harmony way without harming them.

The following are few suggestions to deal with baboons in this area for better co-existence:
1. The house windows should be baboon proof and should be closed and locked.
2. The baboons should never be fed and there should be proper disposal of food remains to avoid attracting baboons near houses.
3. Education to the camp residents on dealing with baboon is urgently required.

Acknowledgement
We acknowledge the Tanzania Wildlife Research Institute (TAWIRI) for supporting the study and Game office staff in Kingupira sector for their positive co-operation during our study. We thank the material support offered by Kingupira Wildlife Research Center under TAWIRI.

REFERENCES


http://www.journalzbr.com/issues.html