EFFECTS OF HUMAN ACTIVITIES ON THE POPULATION OF MAMMALS IN WILDLIFE PARK OF THE UNIVERSITY OF AGRICULTURE MAKURDI, BENUE STATE, NIGERIA.

BY

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A THESIS SUBMITTED TO THE DEPARTMENT OF FORESTRY AND WILDLIFE MANAGEMENT, SCHOOL OF AGRICULTURE AND AGRICULTURAL TECHNOLOGY YOLA.
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DECLARATION

I declare that this work was carried out in its original form by **JAMES AKUMBA ITYAVYAR (M.TECH/FR/06/0127)** of the Department of Forestry and Wildlife Management, Federal University of Technology, Yola.

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APPROVAL PAGE

This thesis entitled "**Effects of Human Activities on the Status of Mammals in Wildlife Park of the University of Agriculture Makurdi, Benue State**" by **JAMES AKUMBA ITYAVYAR (M.TECH/FR/06/0127)** meets the regulations governing the award of degree of Masters of Technology, Wildlife Conservation and Management, Department of Forestry and Wildlife Management, Federal University of Technology, Yola and is approved for its contribution to knowledge and literacy presentation.

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DEDICATION

This work is dedicated to my wife Mrs. Evelyn Mngohol Ityavyar. An advocate of peace, Truth, Fairness, Justice and Hard work.

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ABSTRACT

This study was undertaken in the wildlife park of the University of Agriculture, Makurdi, to produce the species list of mammals in the park, determine the status of mammals in the park, identify the socio-economic characteristics of the support zone dwellers, examine their awareness and perception of the park and determine the factors that will elicit the support of the local dwellers for the park. Species list was obtained using both direct and indirect methods while status of mammals were determined using the kings census method. Structured questionnaires and interviews were used to elicit information from five communities surrounding the park. The questionnaires were administered by simple random method to all those (males and females) that were 18 years and above in each community. Result obtained shows that 19 species of mammals were identified while the status of some of them ranged from 1.0/km^2 to 10.0/km^2 in both the riparian and woody vegetations in the park. There were more males (68.4%) than females (31.6%) among the respondents, while Christians (73.6%) predominate. The age of 90% of the respondents ranged from 18-50 years while majority (81.2%) of them were married. Only 9.2% of the respondents had tertiary education, with only 9.6% working as civil servants. The rest (90.4%) were either farmers, hunters, traders, cattle rearers or fishermen. 66.4% were aware of the existence of the park while 66.8% had knowledge of why the park was created. 47.2% were aware of the law governing the park. The awareness level about the part was found to be significantly {P>0.05} higher than unawareness level. 55.6% indicated that the park is a good project while the factors expected to elicit the local people's support include clinics, electricity, schools, pipe borne water and employment.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

Large mammals are big animals that can produce milk to feed their young ones, example include Elephant *Loxodonta African*, Lion *Pathera leo*, Buffalo *Syncerus coffer*, *Chimpanzee Pantroglodytes*, Giraffe *Giraffa camelopadalis*, Leopard *Panthera perlus*, Bush Buck *Tragelaphus scriptus*, Warthog *Phacocoerus aethiopicus*, Gorilla *Gorilla gorilla* etc Gawaisa (1997).

The establishment of many national parks, game reserves, zoological gardens, sanctuaries and natural history museums backed up by promulgation of wildlife laws, decrees and edicts are clear indication to conserve and manage wildlife resources. Following the drafting of the Organization of African unity Convention on wildlife conservation in 1979, known as “International Treaty Year” Nigeria become a member signatory to the Treaty. The immediate result was the setting up of the Nigerian National Wildlife Development Committee (NNWDC) charged with the responsibility of providing policy for implementation of the agreement of the Organisation of African Unity (O.A.U) convention (Natural Resources Convention Council – NARESCON, 1992).

The action recommendations of the committee are:

1. The effective protection of rare and endangered species of wild animals.
2. Effective hunting control to make it productive rather than destructive.
3. The setting aside of reserve areas for preservation of natural ecosystems (vegetation, soil and wild animals) characteristics of each area on a cultural and economic bases for reservation, tourism, and meat production.
4. The setting aside of unique natural features as national monuments and parks.

Sequel to NNWDC recommendations, the University of Agriculture Makurdi, in 1998 established a wildlife park. The change in status of the area marked the beginning of conflict of wild life park. This is because the new Law regulating the management of the wildlife park extinguished the right of the surrounding communities to exploit some resources of the park for domestic requirement. This was contrary to what was obtained when the area was managed as forest reserve under which large mammals were frequently killed. Hence, the conflicts which reflected the peoples sharp reaction against the discriminatory government policies on their own land.

Abubakar *et al* (1993) observed that the degree of reaction of the surrounding communities against a wildlife park depends on the extent to which they benefit from the park. The creation of the park has impinged upon their means of livelihood, and their perceptions of the benefit they stand to drive from the existence of the park have not been made known to them. This situation influences the extent of illegal activities within the park.

1.1 Objectives of the study

The objectives of the study were;

1. Identify the socio-economic characteristics of the local residents.
2. To asses the status of large mammals in the park.
3. To ascertain the awareness and perception of the local residents about the University wildlife park.
4. To determine the factors that will elicit the support of the local people to the park.

1.2 Statement of problem

Many of the researches done in park were on the ecological health of the park habitat. No work has been done in relation to the animal resources of the park. There is therefore dearth of information on the perception of the local resident about the park, which informs

their attitude towards the park. The illegal activities by the park neighbouring communities on large mammals and in general resources have remained a major set back to the study area.

1.3 Justification of the study

The study identified the reasons for the illegal activities of the local residents and the factors that can elicit the support of the local communities towards the park. This information is necessary for the development of appropriate strategies for the conservation of the resources of the park.

1.4 Scope of the study

The research covered the University of Agriculture Wildlife Park and five neighbouring communities viz: Dei, Anyam, Vambe, Yav and Tse Tyodugh.

1.5 Hypothesis

1. Ho. There are no effects of the park on the neighbouring communities.
2. Ho. There are no effects of the neighbouring community on the park resources.

1.6 Limitation

The study was limited by time and financial constraints.

CHAPTER TWO

2.0 LITERATURE REVIEW

In order to address the process of human impact on the national parks, the linkages between human demographic economic and social systems and wildlife population biology must be identified. For example habitat destruction is not a spontaneous process. It cannot be fully understood if we ignore the activities by human who destroy habitat.

The entry into the systems by which actions maculates the national parks or improve on it has to be identified.

2.1 The value of in-situ conservation in Nigeria

According to Alo *et al* (1997) the ecological benefit of National parks and game reserves used to wildlife conservation are enormous. These include the perpetuation of gene pool, conducive climate, conservation of habitats (water, landscape) and the resultant ecological stability, Poore (1976) stated that the maintenance of diversity in ecosystem buffers against violent oscillations.

Game preservation through the use of game reserves and National Parks is a form of land use requiring large area of land in which animals and plants diversity is usually high (Mossman and Mossman, 1976). Alo *et al* (1997) cited Lekki Conservation Centre,

Stubbs creek conservation project as example of protected area that conserve biodiversity and prevent environmental degradation. Similarly, the Lake Chad National Park and the Hadeja/Nguru wetland conservation centre serve as a check against dissert encroachment. The conservation of wildlife implies the conservation of the entire environment resulting in overall ecological stability.

2.1.1 Protection of environment

The role of National vegetation cover is very important in regulating the behaviour of water drainage systems. According to John *et al (*1982), catchments forest and natural grassland produce a "sponge effect" by which rainfall is trapped and held so that water drains out rather slowly and evenly into the river systems, reducing the tendency of flood in periods of heavy rainfall and continue to release water during period of dry weather for the benefit neighbouring of communities. While Nwoboshi (1982) stated that beyond the supply of industrial raw materials, trees have added value to conservation for scientific purposes, maintenance of water supply and preservation of erosion. Forest cover also helps to keep down local ambient temperatures, benefiting surrounding areas both for agriculture (lowered transpiration levels and water stress) and human comfort (John *et al* …, 1982).

According to Dickinson (1981) there is frowning evidence that undisturbed forest actually helps to create rainfall in its immediate vicinity. This is important in the production of dry season showers which are often more preferable settled agriculture than the heavier monsoon in rain.

2.1.2 Recreational values

The establishment and development of wildlife programmes such as national parks and game reserve has brought about a new form of recreation for the people, national parks and game reserves have tremendous value of attracting both local and international tourist for the purpose of recreation and have been accepted as places of entertainment and mental relaxation. National Parks make a substantial contribution to rural development by enhancing the esthetic and recreational values of natural resources Akosim, (2000). Mackinnan *et al* (1986) and Alo et al 1996 pointed out that eco-tourism development in and around protected areas can be one of the best ways of bringing economic benefits to remote areas can be of the best ways of bringing economic benefits to remote areas by providing local employment stimulation of profitable domestic industries such as food restaurants, improvement of transportation

system and communication, souvenirs and hand crafts and guide services.

2.1.3 Educational value

Wild animals have great educational and aesthetic value, many biology, zoology, ecology and evolution classes from primary schools to Universities use animals as example to illustrate biological principles and theories (Happold, 1987). Alo *et al* (1996) stated that wildlife and natural institutions are materials for education and scientific studies. They further revealed that national parks serve as tools for:

i. Creating awareness of the values of wildlife resources among populace.
ii. Training of manpower in wildlife management and conservation and
iii. Convincing the people on the need to support government effort in wildlife conservation programmes.

2.1.4 Agricultural value

Protected areas often perform useful services for neighbouring agricultural areas in safe guarding against floods by providing both water throughout the dry periods and fertile site in the raining season

(as in Mekong and Red River areas in Vietnam) more over, many of the wildlife species resident in the protected areas are vital to the well being of the surrounding agricultural lands. For example birds help to control the population of insects and rodent pest. Bees perform vital fertilization – functions, and Bats control insects and pollinate many tropical plants flowers (John *et al* … 1982). This agrees with the report of Stant and Marshell (1979) which states the invaluable role of wild nectar – feeding bats that helps in pollinating Durian plant, a highly prized plant in South Asia. So the loss of protected area leads to loss of Bats and in turn failure of the valuable Durian crop.

2.1.5 Research value

An understanding of ecological processes is important if we are able to manage the ecosystems and if we are able to predict the consequences of our action (Poor, 1976). Obot (1992) in his research work in Cross River National Park established 75 plants species from 53 families used for varies curative therapy by the support zone communities. Research in medicine frequently depends on the availability of species. So little is known about most of the wildlife that there are possibilities of major discoveries being made in human medicine as result of investigation on other Animals (Ayeni *et al,* 1992).

2.1.6 Controlled harvesting of wildlife and other natural resources

Hunting and other forms of direct harvesting of wildlife resources are occasionally permitted in some protected areas. According to Child (1984), the controlled culling of excess elephant populations and recreational hunting at the Chirrisa Safari area in Zimbabwe generated a substantial income to the protected area; and its neighbouring communities.

Local communities may also benefit by being allowed into the protected areas at a certain times to harvest some natural resources. In Nepals Reyal Chitwan National park, local people are allowed into the park at a specific period each year to harvest thatch grass, a most important traditional roofing material in the region, as a compensation for the loss of potentially rich agricultural land and for inconveniences they suffer due to their proximity to the park (Mishra, 1984).

Protected areas may also serve as a vital function by protecting a valuable life stage of animals population harvested by local hunters, Krishnamurthy and Jeyaseelam (1980) reported that prawn production from partially protected mangrove swamp in India was estimated at 110kg/1ha/year while in a nearby estuary where the Mangrove were damaged or removed prawn production was just 20kg/ha/year. According to Huthon (1985) the conservation and

production of birding butterfly and endangered species in New Guinea, resulted in engagement of considerable number of farmers, after ten years in this operation, over the years, it has generated an appreciated revenue to the poor neighbouring communities of the park and at the same time achieving less destruction to the ecosystem than harvesting some other firms of forest produce.

According to Adeyoju (1975), there is large number of plants of which some plants such as leaf, fruits, pod, and bark, wood roots one used in both traditional and modern medicines. Ahmed (1994) reported that the infusion of bark and root of Khaya senegelensis is used for the treatment of headache, ascarnies and gonorrhea.

2.1.7 Tourism value

Gawaisa (1997), reported that the support zones of the park have enjoyed tremendous rural transformation through government and non governmental assistance in providing infrastructure such as roads, schools, clinics, electricity, water and employment opportunities particularly for those living close to the parks. National parks and game reserve contribute significantly to local and regional economics, most obviously tourism and the sales of wildlife products.

It is estimated that Nigeria's export of wild animals generated about N20, 000.00 yearly (Statistical News, 1991), these include

Monkeys, birds, reptiles, and wildlife products like the skin of reptiles, mammals, horns, tusks of elephants, birds feathers etc.

2.1.8 Creation of employment opportunities and special treatment

Protected areas create employment; other ways of employment include auxiliary services, tourism development, road improvements and professional services, (John *et al*, 1982). Due to their proximity to environmental critical areas and places of showcase status, local residents near parks and reserves may be eligible for special treatment such as improved social services, communication, soft loans, irrigation and housing project. The Indian Board for wildlife recommended that areas surrounding wildlife reserves should be recognized as special areas for economic development (Government India, 1983).

2.2.0 The problems of national parks in Nigeria

We cannot understand and predict the threats to large mammals, or in general species if we largely improve ignore the trends in human activities, which ultimately cause those threats to wildlife.

2.2.1 Poaching

While the total removal of natural habitat is clearly a major threat to the survival of many African wildlife species an analysis survey data suggest that human predation tends to have greater negative impact on wildlife population (Oats, 1996).

The bush meat crises have emerged as a result of acceleration in the growth of industrial expansion in prior centuries caused people to view wildlife as material resources.

Ayeni *et al* 1992 observed that the immediate effect of wildlife poaching is reduction of game numbers and making wildlife shy of visitors and consequently more difficult to see. This is because of income accruing from poaching. Happold (1987) reported that poaching of many species of ungulates take place at all times of the year and many hunters show little regard to sex, age, and reproductive condition of their quarry. Bush meat hunting for domestic consumption and for the market has the potential to deplete rapidly forest mammals, birds and reptiles population in some cases to the point of extinction (Caldccott, 1987, Geist 1988, Alvard, 1993, Fitzgibbon *et al,* 1995).

Population growth

According to Ijomah and Akosim (2000) as population grows the demand for all human necessities also increase. Those demands include food (which consume large size of land area) and timber to build more houses for the growing population. This result is clearing of bush and felling of trees as situation which leads to the destruction of ecosystem and the extinction of plants and animals. The root cause of all environmental problems is poverty compounded by ever growing population (King Mahendra Trust for Nature Conservation, KMTNC, 2005). Meshane (1996) reported that because of the great increase in African's human population and the expansion of human settlement into areas that were formerly elephant habitats there is simply insufficient suitable place left on the continent to provide for elephant's habitat requirements.

2.2.2 Political instability

According to Lusigi (1984) right across the African continent there are still vivid examples of Military coups, border disputes, vivid confrontations and international political tensions. All these have affected atmosphere in which conservation work and changed natural priorities to favour other unrelated activities. Political instability is a worrying factor in some tropical countries, Revolts,

Coups, guerrilla warfare and the presence of refugees can wreak havoc on protected areas. As it has caused disastrous effect on wildlife population and facilities in Uganda (Kayanja and Denglas – Hamilton, 1984).

2.2.3 Lack of awareness of the benefit of conservation

In Nigeria as in most developing countries lack of awareness of the benefit of conservation is responsible for the people's negative attitudes, lack of support and sometimes total disregard towards conservation issues Ijomah and Akosim (2000), Afolayan (1992) emphasized also that one of the social – cultural factors affecting wildlife resources are inexhaustible.

2.2.4 Non-participation of local people in the sharing of benefit of national parks

Ijomah and Akosim (2000) observed that the organisation and administrative of conservation programmes, especially for forest and wildlife resources have always met with serious difficulties especially in the area of grassroots participation. The omission of the people at the grassroots is the major cause of the failure of most conservation programmes.

They (Ijomah and Akosim) further stated that it has been stressed by many eminent conservationists, that the extent of success achieved in any conservation programme depends on the degree of the involvement of the local people living closest to the national park.

2.2.5 Tradition and culture of protected area neighbouring communities

The history and culture of people constitute one variable source of the understanding of the belief and attitudes that the people have towards conservation. It is true that culture and tradition may be inimical to conservation for example wildlife conservation will face a serious threat in and around a community whose men are traditionally farmers (Ijomah and Akosim, 2000).

2.3 Strategies for conservation of wildlife resources

For the success of management of wildlife resources in protected areas, the socio-economic well being of its neighbouring communities have to be considered and achieved. As this would dissuade the negative attitude of the neighbouring communities towards conserving wildlife resources, and as well create moral support and harmonious working relationship between the protected area and the neighbouring communities (Inah, 2000).

2.3.1 Creation of gainful employment opportunities for the people

Threats and abuses to nature reserve result as a no alternative to stealing hard wood and poaching wild animals. Since these activities are often hard day's work, uncomfortable, risky or even dangerous and one often only marginally profitable many offenders can be persuaded to halt their illegal activities if they are provided with other ways of earning a living (John *et al* 1982).

According to Ijomah and Akosim (2000) the indiscriminate utilization of natural, illegal logging especially for economic resources are reduced if not completely checked through the creation of alternative and gainful employment for those living close to the protected areas.

Apart from being employed as park staff, alternative employment opportunities can be created for the park's communities through special assistance such as providing soft loans or credit facilities for individual farmers, agriculture and grazing improvement schemes, direct grant for improvement for small scale businesses, alternative land right, stimulation of local industry and any other means of living that is compatible to conservation of ecosystem (Sri Lanka Wildlife Conservation Society, SLWCS, 2005).

2.3.2 The use of laws

Illegal logging of trees, collection of forest produce, poaching and trapping of wild animals for trade, meat, skin, feathers, horns, antler or ivory is a threat to the survival of many species John *et al* (1982). In view of increasing demand for these products, it is unlikely that the illegal market for them will subside in the near future, unless effective national laws and international conservations can be enforced more effectively. Laws are used to establish in-situ conservation areas such as National Park and Game Reserves. They also control the indiscriminate use and destructive of habitat and ecosystem as well as of plants and animals.

The laws prescribe punishment for defaulters and therefore help to check abuses (Ijomah and Akosim, 2000).

2.3.3 The size of wildlife population

The wildlife biologist does not lack interest in individual animals, for this form the basis for understanding the larger group. However the conservation, destruction or management of wildlife demands that we be interested in wildlife population and the ways in which these respond to changes in the environment. The population is the basic unit of management, from it we take a harvest and by its response we judge our management effort (Dasmann, 1964).

2.3.4 Provision of social amenities in the neighbouring communities of national park

Expanded social services such as roads, water, electricity, schools, clinic, dispensary etc. Should be provided for the local people as their benefits of residing close to a protected area and to reduce their dependence on the adjacent protected area for harvesting products. (King Mahendra Trust for Nature Conservation KMTNC, 2005). According to John *et al* (1982) wining the support of the local people at the grassroots level and the speed with which this occurs will depend very much on the level of infrastructural facilities such like roads, hospitals, electricity, and water, put in place to benefit the neighbouring communities by the park.

2.3.5 Outside groups participation

Protected area management authorities commonly suffer from shortage of funds and trained manpower, John *et al* (1982). Encouraging others to participate in aspect of protected area management can strengthen substantially the managers and augment his performance. The involvement of outside groups in conservation area management may range from giving advice or donating funds or equipment, assistance in monitoring and law enforcement to execution of community support programmes

(Harrison *et al*, 1984). Ijomah and Akosim (2000) stated that, in Nigeria participation companies should include Banks, Manufacturing houses, Construction companies, Air lines, etc. An enabling legislation is therefore expedient in this regard and to ensure that the policy succeeds in Nigeria, the eligible companies and co-operation should be made to pay certain percentages of their profit into an account to be controlled by committee set up by the Federal Government.

2.3.6 Education and enlightenment campaigns

Usually the most nearest neighbours to the park are the greatest potential treats to its integrity but can be the greatest asset for its protection. Local people can make the manager's job difficult, impressible or easy depending on how well or otherwise they accept the principles of the park and are brought to understand how it brings them benefit not hardship (John *et al*, 1982).

According to Ijomah and Akosim (2000) awareness of the public for the need to conserve natural resources can be through the use of media agencies. In the process, direct campaign is launched against illegal and indiscriminate exploration of natural resources. Uncontrollable bush burning over grazing and environmental degradation through pollution and abuse of fragile ecosystem.

CHAPTER THREE

3.0 MATERIALS AND METHODS

3.1 The study area

This study was carried out at the Wildlife Park of the University of Agriculture Makurdi, located in Makurdi. It lies within the Southern Guinea Savannah Zone between latitude 07^0 49' N and 07^0 52' N and longitude 08^0 40' E and 08^0 38' E (Keay 1959). The study area is located at the North Eastern part of the University. It is about 1.5km on the way to Gbajimba Local Government and shares a common boundary with five villages namely: Tse Dei, Anyam, Vambe, Tse Yauu and Tyodugh. The park covers an area of about 24.2km^2

3.1.1 Topography and drainage

The terrain of the area is basically an undulating plain. Its relief ranges from 83m to 167m above mean sea level. The drainage system in the park comprises of several streams having water only during raining seasons. These major streams, which are tributaries of River Benue, include Baa and Najime streams.

3.1.2 Climate

The climate of the study area is tropical climate with a clear distinct dry and wet season. This climate is characterized by South Western winds coming to the land off the Coast of Guinea. This is the rain bearing winds of region. The harmattan wind prevails during the season from November to March. Rainfall in the wet season (April to October) is about 1.240mm – 1.440mm. Dry season last from November to March. The monthly temperature is about 28.5^{o}C – 36^{o}C) it may rise to 38^{o}C in March to April.

3.1.3 Soils and geology

Three types of soils are found in the study area namely; alluvial, clay, loam, and sandy soil. As for geological setting, the study area is under lined by legume shale and Makurdi sand stone.

3.1.4 Vegetation

The vegetation of the study area is the Guinea Savannah. This characterized by the growth of shoots, grass and thorns which grew

rapidly height of 1.5 to 3.0 meters during raining season. The vegetation has been described as open woodland with trees having broad leaves. The riparian vegetation occurs in areas that are frequently flooded during rains. Areas previously cultivated referred to as grassland vegetation have the emergent of trees.

3.1.5 Fauna

The wildlife park contains most of the animals' species of typical western Guinea Savannah Zone. The area has subjected to intense hunting pressure for a long time and animals are less frequently seen during the day time, but their foot prints and droppings can be seen. Some of the animals and avifauna that roamed the study area and to some extent be seen include; Grimm's duiker *Sylvicapra grimma* Red-flanked duiker *Cephalophus patas* Warthog *Phaccorus aethipicus* Grass cuter *Thryonomys swinderianus* Giant ponchal rat *Cricetonuys gambionus* Monitor lizard *Varanus nitolticus* Guinea fowl *Numida meleagris* Bush fowl *Francolinus albogulanis*.

3.1.6 Land use

The principle land use of the local communities surrounding the park is agriculture. The major crops grown include yam, maize

sorghum, rice, groundnuts, beans, cassava. The animals reared are goats, sheep, pigs, cattle and poultry.

3.2 Demographic characteristic of the surrounding communities

There are five communities around the park which include: Tse Dei, Anyam, Vambe, Tse Yauu and Tyodough. The communities are basically Tiv tribe and pre-dominantly farmers some combine fishing, hunting with farming. The Fulani's are mainly livestock rearers that are found around the area only during the dry season.

3.3 Data collection

3.3.1 Census of mammals

The line transect method as outlined by Sutherland (1999) was used for the census of mammals. These transect were laid according to the vegetation types in the park which comprises Riparian and Woodland vegetation types. Two transects were of 1 kilometer in length and 5 meters in width laid in each vegetation type based on the size of the vegetation. Each of the transect was walked twice in a day for 30 days. The census took place in the morning from 6.00am to 9.00am and in the evening between 3.00pm and 6.00pm. The census commenced at appropriately the same time each day. In all cases, two observers (i.e the author and a game guard) were involved in the census. See appendix –X11.

Observers moved at the rate of 500m/h, stopping occasionally to observe for animals, direct observation (DO). When an animals or group was sighted, the sighting distance was noted. Other information obtained included species, number sighted, category of sighting, group spread, activity when sighted, habitat type and weather condition. The researcher through interviews also obtained information from Hunters (IFH) information from local people (IFLP), informant from bush meat processing and selling centres (IFPSC), Information from Literature (IFL), on the abundance of mammals in the study area was also used.

3.3.2 Social survey

The social survey was carried out through the administration of structured questionnaires and scheduled interviews with the local residents. The simple random sampling method was used in administering the questionnaires to the respondents who attained the age 18 years and above in each of the five communities surrounding the park. Fifty questionnaires were administered in each of the communities giving a total of two hundred and fifty questionnaires.

3.4 Analysis of data

Descriptive statistics, mean, percentages, tables, figures, were used in the analysis of data based on wahua's (1999) principles.

CHAPTER FOUR

4.0 RESULT

4.1 Demographic characteristics

The result of the study in Table 4.1 shows the demographic characteristics of the respondent in the study area. It indicates that majority of the respondents 171(68.4%) were males while many 79 (31.6%) were females. The table also indicate the religious status of the respondents, out of whom majority 183 (73.2%) were Christians, few (21 (8.4%) were Muslims, while 46 (18.4%) were practicing traditional religion. See appendix III

It also shows the age distribution of respondent, majority of them 85 (34.8%) were between 31-40years, many 80 (32.0%) were between 41-50 years, 60 (24.0%), were between 18-30years and 25 (10.0%) were above 50years. See appendix iv.

The table further indicates that 116(46.4%). Were married, 47 (18.8%) were single, 32(12.8%) divorced, 25(10.0%) separated, while 30(12%) were widow/widowers. See appendix v

It also shows that 97(38.8%) of the respondents had no formal education, 94(37.6%) of them had primary school, 36(14.4%) attended post primary institutions, 23(9.2%) were graduates of tertiary institutions, see appendix vi

The result of the study also shows that 114(45.6%) were into farming as their occupation 46(18.4%) were engaged in hunting, 44. (17.6%) were into trading, 24(9.6%) were civil servants. 17(6.8%) were into cattle rearing and 5(2.0%) were into fishing.

Table 4:1 Socio-economic characteristics of the respondents in the study area.

VARIABLE	FREQUENCY	PERCENTAGE(%)
Sex		
Male	171	68.4
Female	79	31.6
Total	**250**	**100**
Religion		
Christian	184	73.6
Traditional	46	18.4
Islam	20	8.0
Total	**250**	**100**
Age		
18-30 years	59	23.6
31-40years	87	34.8
41-50years	79	31.6
51 years and above	25	10.0
Total	**250**	**100**

Marital status		
Married	116	46.4
Single	47	18.8
Divorced	32	12.8
Separated	30	12.0
Window(er)	25	10.0
Total	**250**	**100**
Education		
No formal Education	97	38.8
Primary Education	94	37.6
Post primary education	36	14.4
Tertiary Education	23	9.2
Total	**250**	**100**
Occupation		
Farming	114	45.6
Hunting	46	18.4
Trading	44	17.6
Civil Service	24	9.6
Cattle rearing	17	6.8
Fishing	5	2.0
Total	**250**	**100**

Source: *Field survey, 2008*

TABLE 4.2 Direct observation species list of mammals in Riparian Vegetation type of wildlife park, University of Agriculture

S/N	Common Name of species	Scientific Name of species	Frequency of observations	Estimated mean density per km^2
1	Red flanked duiker	Cehatopus rufilatus	6	600
2	Grimm's duiker	Sylvicapra grimmia	3	300
3	Bush Buck	Tragelaphus scriptus	2	200
4	Spotted Hyaena	Crocuta crocuta	1	100
5	Fox	Vulpes Spp	4	400
6	Grass cutter	Thryonomys swimderianus	1	100
		TOTAL	17	1700

Source: Field survey, 2008 see appendix XIII

TABLE 4.3 Direct observation species list of mammals in Woodland Vegetation type of wildlife park, University of Agriculture

S/N	Common Name of species	Scientific Name of species	Frequency of observations	Estimated mean density per km^2
1	Tantalus monkey	Cercopithecus aethiops	3	300
2	Red patas monkey	Erythrocebus patas	5	500
3	Bush pig	Phacocaerus aethiopicus	2	200
4	Porcupine crested	Hystrix spp	1	100
5	Forest Genat	Genetta poensis	1	100
		TOTAL	**12**	**1,200**

Source: Field survey, 2008 see appendix XIII

Result shown in table 4.2 and 4.3 indicates that 6 species of mammals were directly observed in Riparian Vegetation type and 5 species observed in woodland vegetation type. Red flanked duiker and patas monkey have the highest frequency of observation in Riparian and woodland vegetation types respectively. A total mean density of 2,900 mammals was census per km^2 using king's model.

TABLE 4. 4. Species list of mammals in wildlife park University of Agriculture Makurdi.

	COMMON NAME	SCIENTIFIC NAME	METHODS OF IDENTIFICATION				
			DO	IFH	IFLP	IFPSC	IFL
1	Bush buck	Trageluphus secriptus					
2	Garimm's duiker	Sylvicopra grimmin					
3	Red flanked duiker	Cephatophus mfilaturs					
4	Spotted hyena	Croenta crocuta					
5	Grass cutter	Thryienomys swimderianus					
6	Fox	Vulpes spp					
7	Hares	Lepus corpensis					
8	Red patas monkey	Erythocgbus patas					
9	Tantalus monkey	Cercopithecus aethiops					
10	Bush baby	Galango spp					
11	Porcupine crested	Hyshiy spp					
12	Bush pig	Phacocoems aethiopicus					
13	African civet cat	Vivera civetta					
14	Hunting dog	Hycaon pictus					
15	Lion	Pathera leo					
16	Maxwell duiker	Cephalophus maxwelli					
17	Ground squirrel	Xyrus retilus					
18	Forest Genat	Genetta poensis					
19	African hedgehog	Erinaleus albiventis					

LEGEND

- - Applicable
- - Not Applicable

DO - Direct Observation
IFH - Information from hunters
IFLP - Information from Local People
IFPSC - Information from bush meat processing and selling centres
IFL - Information from literature

Result in table 4.4 also shows the species list of mammals found in the park with their method of identification.

Bush buck *Tragelaphus seriptus*, Porcupin crested *Hystrix spp*, Bush pig *Phacocoerus aethiopicus* featured in all the methods.

4.2 Awareness of respondents about University of Agriculture Wildlife Park.

The result in table 4.5 shows the respondents level of aware of the existence of the park. A total of 166 (66.4%) were awareness of the existence of the park, while 84(33.6%) were not aware of the existence of the park.

The table also presents the respondents knowledge of why the park was created. A total of 167 (66.8%) have the knowledge of while the park was created, 83 (33.2%) do not have the knowledge of why the park was created.

The result also indicates awareness about the laws governing the park, 118 (47.2%) were aware of the laws, while 132(52%) were not aware of the laws. Table 4.6 shows the reason for which the park was created as expressed by respondents in the study area.

Conservation came first with 103(41.2%) Education 83 (33.2%) research 41(16.4%) while tourism 23(9.2%). Table 4.7 indicates laws as stated by the respondents. These include no hunting 102(40.8%)

No cutting of trees 51 (20.4%), No farming 49(19.6%), No bush burning 48(19.2%) see appendix vii-xi.

Table 4.5. Respondents awareness on university of Agriculture Wildlife Park

Variable	Frequency	percentage (%)
Knowledge on park existence		
Aware	166	66.4
Not aware	84	33.6
Total	**250**	**100.0**
Knowledge on why the park was created		
Aware	167	66.8
Not aware	83	33.2
Total	**250**	**100.0**
Knowledge about laws governing the park		
Aware	118	47.2
Not aware	132	52.8
Total	**250**	**100.0**

Source*: Field survey, 2008*

Table 4.6 Reasons for creation of the park to respondents.

Reasons	Frequency	Percentage%
Conservation	103	41.2
Education	83	33.2
Research	41	16.4
Tourism	23	9.2
Total	**250**	**100.0**

Source: *Field survey, 2008*

Table 4.7 Laws governing the park according to respondents

Laws	Frequency	Percentage%
No hunting	102	40.8
No tree cutting	51	20.4
No farming	49	19.6
No bush burning	48	19.2
Total	**250**	**100**

Source: *Field survey 2008*

Table 4.8 Respondents factors that will elicit their support to the park

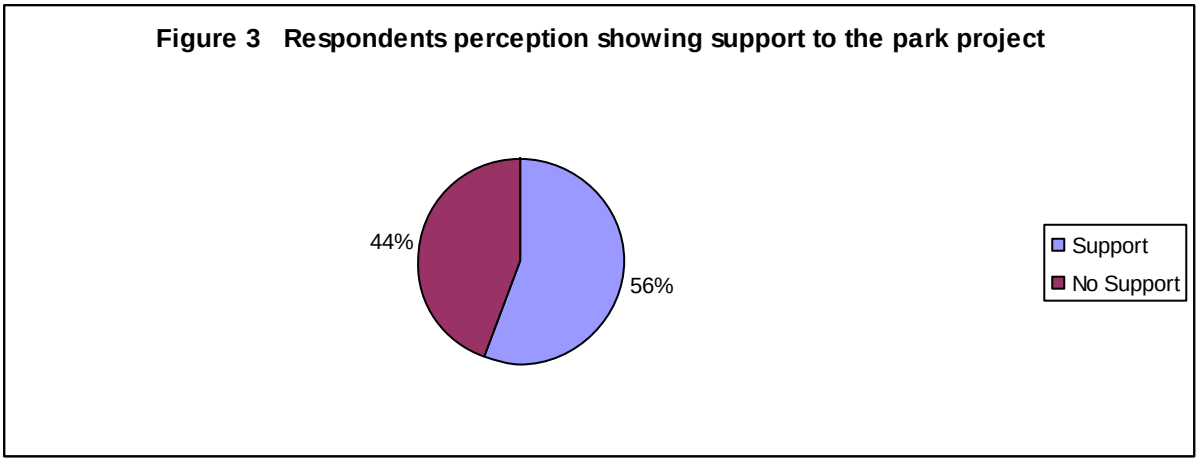
Factors	Frequency	Percentage%
Social amenities (Water, Electricity, clinics, Roads)	90	36.0
Employment	80	32.0
Education	74	29.6
Involvement into committees	6	2.4
Total	**250**	**100**

Source: *Field survey 2008*

4.3 Perception of the respondents about Wildlife Park, University of Agriculture Makurdi.

Result shown in figure 4.1 indicates the perception of the respondents about the park. 139(55.6%) many of them are in support of the project and are of the view that it is a good project. However, 111(44.4%) less than half are not in the support of the project.

Figure 3 Respondents perception showing support to the park project



4.4 Respondent factors that will elicit their support to the park

The result in table 4.8 shows the respondents factors that will elicit their support to the park project as follows.

Provision of social amenities (water, clinic, electricity, Road) 90 (36.0%) provision of employment opportunities 80 (32.0%) provision of education 74 (29.6%), involvement of respondents into park committees 6 (2.4%).

CHAPTER FIVE

5.0 DISCUSSION

5.1 Demographic characteristics

The result of the study shows more male respondents (68.4%) than female (31.6%). This was due to the culture of the respondents. The culture of the respondent allows males to respond to issues first. More also due to the shyness exhibited by females towards answering the interview questions and the questionnaires. However, conscious effort was made to ensure that adequate number of females was reached in order to combine their opinion on the study.

The results also showed that majority of the respondents were Christians (73%) followed by traditional religion (18.4%). Majority of the respondents (34.8%) fall within the age group of 31-40yrs. This is very active segment of the population. Due to the absent of industries in the study area, this group are more negatively affected and in turn affect the resources of the park adversity. The result also showed that (46.4%) sampled were married out of which (12.8%) were divorced and 10.0% separated respectively. This is indicative of possible pressure or resources of the park and the available land belonging to those communities, since they will all depend on the farm and park resources for sustenance. This agrees with Ijeomah and Akosim (2000) observation on the relationship, between population growth and resource conservation.

There is relatively low level of western education 38.8% had no formal education and only 9.2% had territory education.

In all the communities visited, the educational institution seen were primary schools, and in some there were even none. There is therefore no doubt why majority of the respondents were mostly primary school leavers. In these five communities' only one secondary school was seen, members of the communities have to travel long distances to get to school.

Majority of the respondents 45.6% were into farming as their occupation. The remaining 54.4% were in other occupations like, hunting, trading, civil service cattle rearing and fishing.

5.2 The status of large mammals in the park.

The result in table 4.2 and 4.3 shows a total of 2,900 mammals per km^2 in the park. Large mammals were particularly low as compared to the size of the park. This is due to the high level of destruction of the park by farming activities, felling of trees for fire wood ad timber. Hunting activities along the River bank has devastated the park.

This is alarming and therefore call for urgent intervention of the park management

5.3 Awareness of respondents about the park.

The result in table 4.5 depicted the level of awareness by the respondents about the existence, (66.4%) of the park. Why the park was created (66.8%) and the laws governing the park (47.2%).

This indicates that the park management has not done very well in educating the communities neighboring the park on the objectives of the park.

It is therefore necessary for keeping the communities more abreast about the park through its conservation education enlightment programmes. This will continue to create more awareness and understanding between the park management and the communities as observed by John *et al* (1982)

5.4 Attitude of respondents towards the park

Despite the feeling of the respondents that the park has taken all their land more than half (55.6%) still believe that the park project is a good development to them. This attitude is based on the anticipation that things could change and that they will likely benefit in the near future. These same findings were made by Alexander (2000) in Belize while working on a community baboon sanctuary. This therefore raises the hope for sustainable conservation in the study area:

The illegal activities in the park is an indication that the parks do not adequately take care of their needs.

5.5 Respondent's factors that will elicit their support to the park.

The result in table 4.6 indicate the social and economic needs of the respondents, social amenities like clinics, good water, electricity, good roads, quality education and employment will elicit the support to the park, according to responses of the local communities, these are factors that would improve on their living standard and generate supports of the members of the local communities towards the park. This is because the provision of these social and economic facilities will boast their income; make them economically self-reliant among other attendant benefits. The ultimate result is that the desire to trespass into the park will no longer exist; hence the harmonious coexistence of the park and the neighbouring communities would have been achieved.

CHAPTER SIX

6.0 SUMMARY, CONCLUSION AND RECOMMENDATION

6.1 Summary

The study examined the social-economic characteristics, assessed the status of large mammals, as well as the awareness and perception of the local residents about the park. The study went further to determine factors that will elicit the support of the local people to the park.

Majority of the respondents were found to be active and able-bodied men engage mostly in agriculture activities as their major occupation. The marital status shows that a reasonable number of the respondents were married. There were few cases of separation and divorce. Polygamous marriages were also noticed. There is therefore every need to educate these communities on family planning.

The status of large mammals was found to be very low. However, mammals were directly observed in both Riparian and woodland vegetation types of the park. This is due to high activities of hunters and farming. Felling of trees for timber and fuel wood have also contributed in driving the large mammals away from the park.

Awareness of the local residents about the existence of the park, why it was created was very high. However the laws governing

the park were found to be very low. The opinion and attitude of local resident toward the park were found to be both positive and negative. However, majority of respondents viewed it as a good project and have shown support to its existence. But, some respondents carry out illegal activities in the park. The effects of the park on residents were found to be inadequate farmland coursed by the loss of the community land to the park. Prevention of cutting of trees for fuel wood and loss of their plantation to the park among others.

Presently, majority of the respondents were found to be made poor by the park. The following reasons accounted for their poverty; shortage of farmland for crops cultivation, loss of plantation to the park. The respondents that felt they were enriched by the park, gave the following reasons as, trading, employment and casual laborers in the park. The development needs or factors that will elicit their full support to the park comprises of social and economic needs. The social needs include, electricity, water, health clinics, roads, education, while the economic needs consists of agricultural inputs, farm implements and market.

6.2 Conclusion

For long time survival of wildlife resources, it can only be achieved by adequately involving the residents of the neighbouring communities in the management of park resources. This is true because they are the cardinal factors towards its success or failure.

Result of the study has shown the presence of mammals in the park, although large mammals like elephant, lion, gorilla etc are not found in the park, however small and medium size mammals were found during the census.

More also, the result has indicated the local residents awareness of the park existence, why it was created and the laws governing it to be very high. The opinion and attitude of majority of the residents about the park were found to be the negative and positive. The park management should step up conservation education programmes as well as reduce the negative effect of the park on the neighbouring communities. This will create more support from the local residents and encourage better understanding between the park and the neighbouring communities.

There is need for provision of more alternative means of livelihood and social amenities currently lacking in the neighbouring communities. These if provided would further reduce the negative tendencies of local residents towards the park resources.

6.3 Recommendation

Based on the finding of this study the following recommendation are made

(i) The park management should increase its effort in conservation education enlightment campaign in order to make all residents in the neighbouring communities aware of the park existence, why it was created and the laws governing it.

(ii) Despite the park achievement in the area of employment, more effort should be ensured that local residents are involve in the park management through appointment of Liaison officers, informants casual Labourers and committees from the local residents and formation of youth clubs in the neighbouring communities.

(iii) Effort should be made by the park to extend their project so that all communities would be beneficiaries of the project. They should also provide infrastructural facilities to park neighbouring communities. This is because all communities are demanding for several amenities like, health facilities, water, roads and education.

(iv) Local residents should be educated on alternative means of livelihood such as relevant and modern agricultural practice that can give high yield within the available land at the same

time the method should be ecologically friendly. The local residents should also be trained on skill acquisition in trade and tourism related occupations such as craft making and tailoring.

(v) Presently, the land available to the local residents has been limited by the park project. Any uncontrolled population growth in the area could lead to future land crisis. Therefore it is high time that population control programme be launch in the study area.

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APPENDIX I

Questionnaire survey of the neighbouring communities on the local attitudes in relation to the status of large mammals in Wildlife Park, University of Agriculture Makurdi.

Socio-Economic Characteristics

1. Date ……..
2. Name of Respondent ……
3. Name of Respondent village ……..…. Sex ……
4. Ethnic Group ……. Religion ……...
5. Marital status ……..... Education level ……..
6. To which of this age group do you belong?

   18 - 30yrs ( )

   30 – 40yrs ( )

   41 – 50yrs ( )

   50yrs and above ( )
7. Which of these is your occupation?

   Farming ( )

   Hunting ( )

   Fishing ( )

   Trading ( )

   Cattle Rearing ( )

   Civil Servant ( )

7b. What is your Annual income? ( )

8. Have you heard about University of Agriculture Wildlife Park?

   Yes ( ) No ( )
9. Do you know why University of Agriculture Wildlife Park was created?

   Yes ( ) No ( )
10. If Yes, list reasons why you think it was created.

i. ……..

ii ……...

iii ……..

11. Do you make use of any wildlife resources from the park?

    Yes ( ) No ( )

12. If yes, please list the kind of wildlife resources you are using from the park.

Fauna	Flora	Others
i. ii. iii. iv.		

13. How do you acquire these resources from the park?

    Legal ( ) Illegal ( )

14. Do your use the above mentioned park resources as a source of income?

    Yes ( ) No ( )

15. During which period of the year are these resources available?

    ……..

16. What is the state of wildlife resources in the park?

    a. Increasing b. Decreasing c. Stable

17. Please state the reason to your answer in question No. 16.

    ……

    ……

18. List the benefits you are getting from the existing of the park?

    ……

    ……

19. What are the problems you are facing from existence of the park?

    ……

    ……

20. Suggest ways you think the problems would be reduced.

……

……

21. What are the social amenities infrastructures that you have in your community?

……

……

22. Are there other social amenities you would want the park to provide for your community?

Yes ( ) No ( )

22b. If Yes, list them

……

……..

23. Have you become richer or poorer from the existence of the park?

……

……

24. If richer, list the ways in which the park has made your richer.

……

……

25. If poorer, list the ways it affects you.

……

……

26. Are you involved in the management of the park?

Yes ( ) No ( )

27. If Yes, in what ways are your involved in the management of the University wildlife park?

……

……

28. If No, would you like to be involved in the management of the University wildlife park?

……

……

29. If Yes, in what ways do you want to be involved?

……

……

30. What is the relationship between your community and the park management?

i. Cordial ( ) ii. Very cordial ( ) iii. Not cordial ( )

31. Are your aware of laws of governing University Wildlife Park?

Yes ( ) No ( )

32. If your answer if Yes, please list them out.

……

……

33. Which among the laws mentioned above would you like the University Wildlife Park to abrogate?

……

……

34. Are you in support of existence of the University Park?

Yes ( ) No ( )

35. If Yes, state your reasons.

……

……

36. If No, state your reasons.

……

……

37. Suggest ways on how trespassing into the park can be solved.

……

……

38. Suggest ways on how park authority and her neighbouring communities can coexist harmoniously for their mutual development.

……

……

APPENDIX II

Gender composition of respondents in neighbouring communities of the park.

Communities	Male	Female	Total
Tse-Die	39	11	50
Tse-Anyam	33	17	50
Tse-Yav	21	29	50
Tse-Vambe	30	20	50
Tyodugh	48	2	50
Total	**171**	**79**	**250**
Percentage%	**68.4**	**31.6**	**100**

Source *– field survey, 2008*

APPENDIX III

Rreligious status of respondents in neighbouring communities of the park

Communities	Christianity	Islam	Traditional	Total
Tse-Dei	36	10	4	50
Tse-Anyam	32	2	16	50
Tse-Yav	41	4	5	50
Tse-Vambe	29	3	18	50
Tyodugh	45	2	3	50
Total	**183**	**21**	**46**	**250**
Percentage %	**73.2**	**8.4**	**18.4**	**100**

Source *- field survey, 2008.*

APPENDIX IV

Age distribution of respondent in the neighbouring communities of the park

Communities	18-30yrs	31-40yrs	41-50yrs	50yrs & above	Total
Tse-Die	18	4	21	7	50
Tse-Anyam	12	26	8	4	50
Tse-Yav	15	11	22	2	50
Tse-vambe	9	20	12	9	50
Tyodugh	6	24	17	3	50
Total	**60**	**85**	**80**	**25**	**250**
Percentage %	**24.0**	**34.8**	**32.0**	**10.0**	**100**

Source *- field survey 2008*

APPENDIX V

Martial status of respondents in the neighboring communities of the park.

Communities	Single	Married	Separated	Divorced	Widow	Total
Tse-Die	7	25	7	6	5	50
Tse-Anyam	13	21	5	4	7	50
Tse-Yav	7	21	1	11	10	50
Tse-vambe	12	20	6	5	7	50
Tyodugh	8	29	6	6	1	50
Total	**47**	**116**	**25**	**32**	**30**	**250**
Percentage %	**18.8**	**46.4**	**10.0**	**12.8**	**12.0**	**100**

Source *- field survey 2008*

APPENDIX VI

EDUCATIONAL STATUS OF RESPONDENTS IN THE NEIGHBORING COMMUNITIES OF THE PARK.

Communities	No formal Education	Primary Education	Post Primary Education	Tertiary Education	Total
Tse-Die	18	22	5	5	50
Tse-Anyam	25	14	9	2	50
Tse-Yav	24	12	5	9	50
Tse-vambe	19	15	10	6	50
Tyodugh	11	31	7	1	50
Total	**97**	**94**	**36**	**23**	**250**
Percentage %	**38.8**	**37.6**	**14.4**	**9.2**	**100**

Source *– field survey, 2008*

APPENDIX VII

RESPONDENTS AWARENESS ON EXISTENCE OF THE PARK

Communities	Respondents aware of park existence	Respondents not aware of park existence	Total
Tse-Die	37	13	50
Tse-Anyam	32	18	50
Tse-Yav	27	23	50
Tse-Vambe	29	21	50
Tyodugh	41	9	50
Total	**166**	**84**	**250**
Percentage%	**66.4**	**33.6**	**100**

Source *– Filed survey, 2008.*

APPENDIX VIII

RESPONDENTS KNOWLEDGE ABOUT WHY THE PARK WAS CREATED.

Communities	Respondents aware why the park was created	Respondents not aware why the park was created	Total
Tse-Die	37	13	50
Tse-Anyam	32	18	50
Tse-Yav	28	22	50
Tse-Vambe	29	21	50
Tyodugh	41	9	50
Total	**167**	**83**	**250**
Percentage%	**66.8**	**33.2**	**100**

Source *- field survey, 2008*

APPENDIX IX

RESPONDENTS AWARENESS OF THE LAWS GOVERNING THE PARK

Communities	Respondents aware of the laws	Respondents not aware of the laws	Total
Tse-Die	24	26	50
Tse-Anyam	29	21	50
Tse-Yav	19	31	50
Tse-Vambe	20	30	50
Tyodugh	26	24	50
Total	**118**	**132**	**250**
Percentage%	**47.2**	**52.8**	**100**

Source *– field survey, 2008.*

APPENDIX X

ATTITUDE OF RESPONDENTS TOWARDS THE PARK.

Communities	Respondents support to the park	Respondents not in support of the park	Total
Tse-Die	33	17	50
Tse-Anyam	28	22	50
Tse-Yav	24	26	50
Tse-Vambe	28	22	50
Tyodugh	26	24	50
Total	**139**	**111**	**250**
Percentage%	**55.6**	**44.4**	**100**

Source *– field urveys, 2008*

APPENDIX XI

THE EFFECTS OF THE PARK ON RESPONDENTS ECONOMIC STATUS.

Communities	Richer	Poorer	Total
Tse-Die	29	22	50
Tse-Anyam	31	19	50
Tse-Yav	22	27	50
Tse-Vambe	29	21	50
Tyodugh	27	23	50
Total	**138**	**112**	**250**
Percentage%	**55.2**	**44.8**	**100**

Source *– fi eld survey, 2008*

APPENDIX XII

RESEARCH ON POPULATION OF LARGE MAMMALS IN WILDLIFE PARK, UNIVERSITY OF AGRICULTURE, MAKURDI BY ITYAVYAR AKUMBA JAMES.

Transect No……Habitat type……

Date……..Time…….

1 N0	2 Name of species	3 MFX	4 Y A	5 Group size	6 Activities When First Sighted	7 Perpen-dicular distance	8 Sighting Distance	9 Topo-graphy	10 Whether condition
		M-Male F-Female X-Unclassified	A – Adult Y – Young						

APPENDIX XIII a

King's Model for Estimation of Animal population Density (Caughley, G).

$$D = \frac{n}{2LW}$$

D = mean density

n = number of animal specie sighted

L = length of transect

W = Width of transect

APPENDIX XIII b

Estimation of Direct observation (DO) mammals in Riparian vegetation type of the Park

D = ?

n = 6 (Red flanked duiker)

L = 1km

W = 5 m (0.005km)

:- D = $\frac{6}{2x1x0.005}$ = 6/0.01 = 600 Red flanked duikers / km^2

APPENDIX XIII C

Estimation of direct observation mammals in Woodland Vegetation type of the Park.

D = ?

n = 5 (patas monkeys)

L = 1 km

W = 5 m (0.005km)

:- D = $\frac{5}{2 \times 1 \times 0.005}$ = 5/0.01 = 500 Patas monkeys / km^2

APPENDIX XIV
Information from Local people (IFLP) on Species of Mammals in Wildlife Park , University of Agriculture Makurdi.

	COMMON NAME	SCIENTIFIC NAME	LOCAL NAME (TIV)
1	Bush buck	Trageluphus secriptus	Ivambe
2	Garimm's duiker	Sylvicopra grimmin	Iho
3	Red flanked duiker	Cephatophus mfilaturs	Ikyuran
4	Spotted hyena	Croenta crocuta	Dwem
5	Grass cutter	Thryienomys swimderianus	Iviha
6	Fox	Vulpes spp	Ichongo
7	Hares	Lepus corpensis	Alom
8	Red patos monkey	Erythocgbus patas	Bagu
9	Tantalus monkey	Cercopithecus aethiops	Kyarakya
10	Bush baby	Galango spp	Tsarahu
11	Porcupin crested	Hystrix spp	Iyugh
12	Bush pig	Phacocoems aethiopicus	Igotoho
13	African civet cat	Vivera civetta	Jev
14	Hunting dog	Lycaon pictus	Iwa – toho
15	Lion	Pathera leo	Begha
16	Maxwell duiker	Cephalophus maxwelli	Ikpam
17	Ground squirrel	Xyrus retilus	Hinga
18	Forest Genat	Genetta poensis	Ikiou
19	African hedgehog	Erinaceus albiventris	Adedem

Source: Field Survey, 2008