



## Effects Of Banditry and Illegal Logging on Conservation in Kainji Lake National Park, Nigeria

<sup>1\*</sup> AYENI, SM; <sup>1</sup> MEDUNA, PN; <sup>2</sup> BABATUNDE, AA

<sup>1</sup>Federal College of Wildlife Management, Forestry Research Institute of Nigeria, P.M.B 268, New Bussa, Nigeria

<sup>2</sup>Old Oyo National Park, Oyo State, Nigeria

\*Corresponding Author Email: [NaGod0607@gmail.com](mailto:NaGod0607@gmail.com)

\*ORCID: <https://orcid.org/0000-0003-2117-8572>

\*Tel: +2348035179759

Co-Authors Email: [saadayeni115@gmail.com](mailto:saadayeni115@gmail.com); [Patndidi8080@gmail.com](mailto:Patndidi8080@gmail.com); [rashbab142@gmail.com](mailto:rashbab142@gmail.com)

**ABSTRACT:** The objective of this paper is to investigate the Effects of Banditry and Illegal Logging on Conservation in Kainji Lake National Park, North Central, Nigeria using standard procedures by distributing one hundred and ninety four (194) questionnaires, of which one hundred and thirteen (113) were completed and returned. The result of demographic characteristics of respondents indicates that the male respondents were dominant (75.7%). Furthermore, 51.4% of the sampled populations falls between age group 35-44 years, followed by 25-34 years with 30.8% and age group 45 and above were the least (17.8%). The finding further revealed that majority of the respondents was married (71.0%) and 59.8% of the respondents had tertiary education while 40.2% had secondary education. Also, majority of the respondents are Muslims (71.0%) while 29.0 are Christian. Majority of the respondents (52.3%) had worked between 11-20 years. The respondent's monthly income of the majority (55.1%) respondents is between ₦50, 000-99,000. The species of tree and animals that are mostly affected by illegal logging includes; *Adansoniadigitata*, *Azelia africana*, *Milicia excels* etc. The animal species includes Grim duiker, Guinea fowl, Bushbuck, Rabbit etc. The effects of banditry and illegal logging on wildlife conservation in Kainji Lake are destruction of habitat (45.1%) and decline in wildlife population (38.1%) recorded the highest percentages, followed by loss of biodiversity (11.5%) while climate change is the least with 4.4%. The management strategies to proffer solution to the menace in the study area in which adequate field equipment for staff recorded the highest with 31.9%, followed by adequate staff training with 30.1% while demarcation of Park boundary recorded the least with 15.0%. The study concludes that there are banditry and illegal logging activities in Kainji Lake National Park.

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Man is closely and inextricably linked to his natural environment, his productive and social activities are equally the reflection of this. Similarly, social structures and relations are consequently shaped to a significant degree by the available natural resources, weather pattern and by a variety of other characteristics of the environment (Gbadegesin, 2000). While man depends on the environment for

survival, the environment equally needs man for it to be sustainable for the generations yet unborn. Around the world, human activities are taking a heavy toll on the environment particularly the biodiversity (variety of all forms of life, from genes and species to ecosystems). Forests and woodland have been destroyed to make way for new cities, industrial and housing estates, unregulated extractive industries,

\*Corresponding Author Email: [NaGod0607@gmail.com](mailto:NaGod0607@gmail.com)

\*ORCID: <https://orcid.org/0000-0003-2117-8572>

\*Tel: +2348035179759

creeping urbanization, ram-pant coastal development, illegal and unregulated hunting, trade in wildlife products and rapacious overfishing by giant industrial fleets are fragmenting and destroying natural environments as well as depleting many species (Roe, 2008).

The need for sustainable natural resource management (NRM) therefore informs the constant focus of global attention on issues related to environmental sustainability most importantly in develop-ing countries (HDR, 2011).

The far reaching effects of environment degradation equally make the need for economic and social peace with the demands on the environment a thing of priority almost the single most important global agenda (UNDESA, 2010). Wrestling *et al* (2001) observed that humans are utilizing all the world's major renewable natural resources at rate ever more greatly exceeding their natural abilities to re-new themselves while introducing pollutants into the environment at levels increasingly beyond the point at which they can dissipate or decompose into significance.

Degraded landscapes and dwindling species spell tragic consequences because the loss of biodiversity reduces the quality of life for all (Azqueta and Sotelsek, 1999; Soewu, 2004; Ray, *et al.*, 2013). At the same time, the very survival of the indigenous people that depend on healthy and productive ecosystems to meet their daily needs is at stake hence the need to protect the diversity of life, not only for its intrinsic value, but also because a vibrant, healthy society depends on continued success in safeguarding the threatened natural assets (Azqueta and Sotelsek, 1999; UNEP, 2007).

The need for this however has led to the increasing awareness of the potentially dangerous consequences of such loss on the earth's ecological functions and the fulfillment of basic human developmental needs.

Thus the need for appropriate management and protection of natural areas becomes an important issue in view of the increasing numbers of visitors to protected areas and the impacts associated with this visitation (Littlefair, 2003).

Environmental conservation through sustainable utilization of resources and the establishment of protected areas thus become handy tools for safeguarding the degraded natural resources.

Egwu (2016) in a restricted manner, described banditry as a practice of stealing cattle and animals from herders or raiding of cattle from their ranches. In the same vein, banditry is reflected in criminal escapades like cattle rustling, kidnapping, armed robbery, drug abuse, arson, rape and the brazen and gruesome massacre of people of agrarian communities with sophisticated weapons by suspected herdsmen and reprisal attacks from surviving victims, a development that has been brought to the front burner of national security (Uche and Iwuamadi, 2018).

There are numerous literatures on the different species of wild animals found in Kainji Lake National Park but few or no on the effect of banditry and illegal logging activities on wildlife conservation of the Park.

This is necessary especially when dealing with the conservation of biodiversity in its totality. Hence, the objective of this paper is to investigate the Effects of Banditry and Illegal Logging on Conservation in Kainji Lake National Park, North Central, Nigeria.

## MATERIALS AND METHODS

*Study Area:* Kainji Lake National Park is located in the North central part of the country lies latitude 9°45 and 10°23N and longitude 3°40 and 5°47E. It is made up of two sectors (Borgu and Zugurma) situated in Borgu and Kaima/Baruten Local Government Area of Niger and Kwara State respectively. It covers a total land area of 5,340.825q.

*Study Population:* The population for this study consists of staff of Kainji Lake National Park

**Table 1:** Population of staff of Kainji Lake National Park

Departments	Number of Staffs
Human Resource Management	33
Ecology and Resource Management	241
Audit	5
Planning Research and ICT	17
Finance and Account	13
Ecotourism	28
Work and Maintenance	37
Public Relation Officer	2
Total	376

Source: Administrative Records, 2022.

*Sample Size:* The whole population of the study cannot be study, the sample size was determine using Taro Yamen method (Schawans, 1994).

$$n = \frac{N}{1 + e^2} \quad (1)$$

Where N= Population; 1= Constant; e= Correlation factor (Level of significance of error assumed to be 5%).

Therefore n will be in equation 2

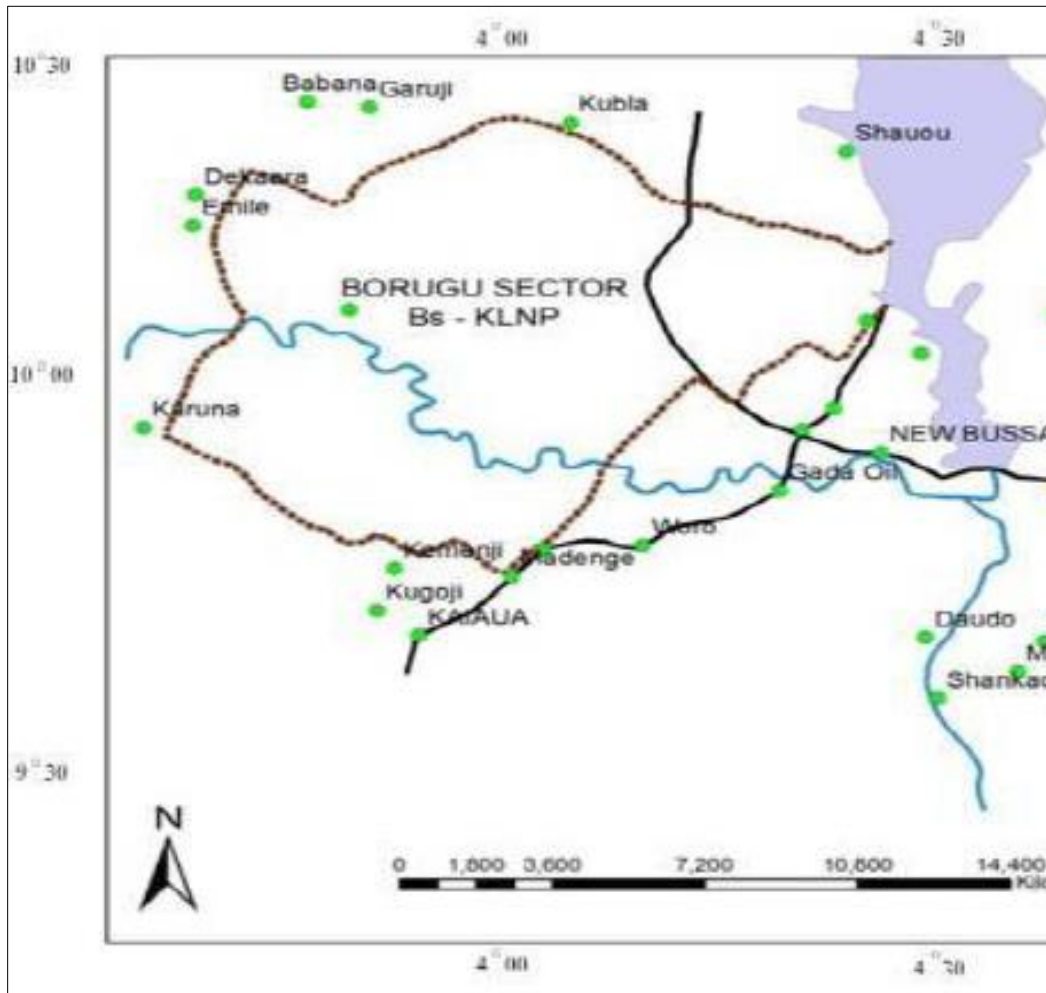
$$n = \frac{376}{1 + 376(0.05)^2} = 193.8 = 194 \quad (2)$$

Therefore, one hundred and ninety four (194) questionnaires was distributed among the staff, of

which one hundred and thirteen (113) questionnaire was filled and returned.

*Sampling Techniques:* Purposive sampling was used to select one hundred and ninety four (194) respondents from the total population.

*Data Analysis:* Data obtained was analysed using descriptive statistics where results are presented in tables and frequency counts. The statistical analysis was performed using SPSS.



**Fig 1:** Map of Borgu sector in Kainji Lake National Park  
Adapted from Ayeni (2007)

**RESULTS AND DISCUSSION**

The result of demographic characteristics of respondents sampled as presented in Table 1 indicates that the male respondents were dominant (75.7%), while the female were only 24.3%. Furthermore, 51.4% of the sampled populations’ falls between age group 35-44 years, followed by 25-34 years with 30.8% and age group 45 and above were the least (17.8%).

The table 1 further revealed that majority of the respondents was married (71.0%) while 29.0% are unmarried. It can equally be noted from the table that 59.8% of the respondents had tertiary education while 40.2% had secondary education.

Also, majority of the respondents are Muslims (71.0%) while 29.0 are Christian. The table also showed that majority of the respondents (52.3%) had

worked between 11-20 years while  $\geq 21$  are the least with 17.8%.

The respondent's monthly income of the majority (55.1%) respondents is between ₦50,000-99,000 while 15.9% earned  $\leq$  ₦49,000. Figure 1 showed the awareness of banditry and illegal logging activities in the Park, in all the respondents agrees that banditry is going on within the Park. The species of tree and animals that are mostly affected by illegal logging are showed in table 2 and 3, in which ten (10) species of trees are indicated tis includes; *Adansoniadigitata*, *Afzeliaafricana*, *Milicia excels* etc.

The animal species includes Grim duiker, Guinea fowl, Bushbuck, Rabbit etc. The effects of banditry and illegal logging on wildlife conservation in Kainji Lake are revealed in table 4, destruction of habitat (45.1%) and decline in wildlife population (38.1%) recorded the highest percentages, followed by loss of biodiversity (11.5%) while climate change is the least with 4.4%.

Table 5 revealed the management strategies to proffer solution to the menace in the study area in which adequate field equipment for staff recorded the highest with 31.9%, followed by adequate staff training with 30.1% while demarcation of Park boundary recorded the least with 15.0%.

**Table 1:** Demographic characteristic of the respondents

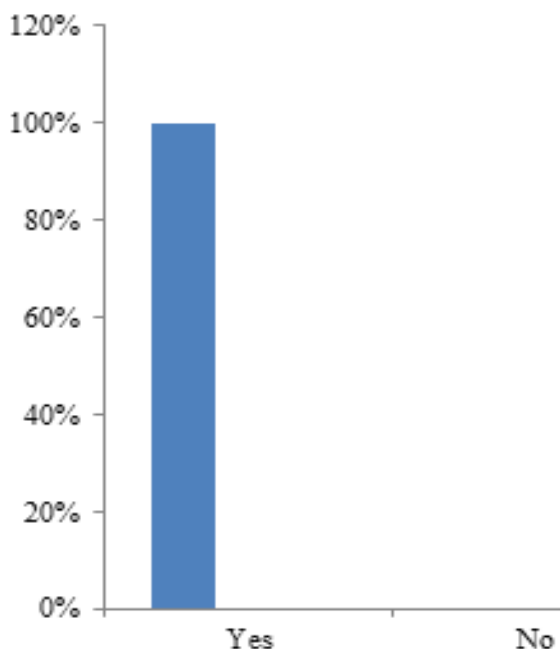
Demographic	Variables	Frequency	%
Gender	Male	89	78.8
	Female	24	21.2
Age Group	$\leq 30$	14	12.4
	31-40	55	48.7
	41-50	33	29.2
	$\geq 51$	11	9.7
Marital Status	Married	85	75.2
	Single	21	18.6
	Divorce	2	1.8
	Widow/widower	5	4.4
Level Of Education	Primary	-	-
	Secondary	48	42.5
	Tertiary	65	57.5
Years in Service	$\leq 10$	34	30.1
	11-20	63	55.7
	$\geq 21$	16	14.2
Religion	Christianity	32	28.3
	Muslims	81	71.7
	Traditional	-	-
Income Per Month	$\leq$ ₦49,000	19	16.8
	₦50,000-99,000	66	58.4
	$\geq$ ₦100,000	28	24.8
Family Size	$\leq 5$	67	59.3
	6-10	39	34.5
	$\geq 11$	7	6.2
<b>Total</b>		<b>113</b>	<b>100.0</b>

**Table 2:** Species of Tree that are mostly Affected by Illegal Logging Activities

S/N	Botanical Names
1	<i>Adansoniadigitata</i>
2	<i>Isolberlinadoka</i>
3	<i>Afzelia Africana</i>
4	<i>Milicia excels</i>
5	<i>Vitellariaparadoxa</i>
6	<i>Khayaivorensis</i>
7	<i>Azadirachtaindica</i>
8	<i>Gmelinaarborea</i>
9	<i>Antiaris Africana</i>
10	<i>Daniela oliveri</i>

**Table 3:** Species of Animal that are mostly Affected by Illegal Logging Activities

Common Name	Scientific Name
Grim Duiker	<i>Sylvicapragrimmia</i>
Guinea Fowl	<i>Numidameleagris</i>
Bushbuck	<i>Tragelaphusscriptus</i>
Rabbit	<i>Oryctolagusuniculus</i>
Grasscutter	<i>Thryonomyswinderianus</i>
Giant Rat	<i>Cricetomysemini</i>
Roan Antelope	<i>Hippotragus equines</i>
Warthog	<i>Phacochoerusaffricanus</i>
Buffalo	<i>Bubalusbubalis</i>
Kob	<i>Kobuskob</i>



**Fig 1:** Awareness of Banditry and Illegal Logging Activities in the Park

**Table 4:** Effects of Banditry and Illegal Logging on Wildlife Conservation in Kainji Lake National Park

Effects	Frequency	(%)
Destruction of Habitat	51	45.1
Decline in wildlife population	43	38.1
Loss of Park biodiversity	13	11.5
Climate change	5	4.4
<b>Total</b>	<b>113</b>	<b>100.0</b>

**Table 5:** Management Strategies to Proffer Solution to the Menace

Strategies	Frequency	(%)
Adequate field equipment for staff e.g Gun, Patrol vehicle	36	31.9
Demarcation of Park Boundary	17	15.0
Adequate staff training	34	30.1
Employment opportunities to support zone communities	27	23.9
<b>Total</b>	<b>113</b>	<b>100.0</b>

Management implications of level of job satisfaction of Nigeria National Parks employees are far reaching. For conservation organisations, job satisfaction is very pivotal to the attainment of conservation goals and objectives, and as such, human resource management should be considered as important as the management of the resources (Solly, 2013). This is because satisfied employees have the propensity of exerting high efforts in meeting organizational goals and objectives than dissatisfied ones (Solly, 2013).

This findings indicated that large percentage of the staff (78.8%) are male indicating that the job of park or game reserve protection is dominated by male, who are more energetic and would be able to face the challenges of park protection. This was results was in line with the work of Ogunjimiet *al.* (2013) that reported larger percentage of male ranger in Nigeria National Pak. Also majority of the (48.7%) are between the age range of 31-40 years (table 1). Ogunjimiet *al.* (2008) ascertain that majority of Yankari Game reserve ranger fall between age group of 40 years and below.

Which means that they are still this staff are still in their active age and this makes them to be able to perform various difficult tasks like patrol. In addition, 75.2% of them are married. This indicates that rangers' occupation can be dependent upon catering for their family needs. It was also found out that 71.7% of the KLNP staff is Muslims; this is because Islamic religion adherents populate Niger State where the study is being carried out. Also, 57.5% of them had tertiary education.

This result contradicts the finding of Ayodele and Falaye(2013) that reported that most Game reserved staff had secondary education because it is the basic qualification for employment as a ranger, although repentant hunters with lower qualifications are often employed because of their experience as poachers which can enhance anti-poaching activities.

The high number of tertiary education holders in the study can be attributed to the presence of Federal College of Wildlife Management which avails the respondents to pursue their tertiary education

certificate. In terms of work experience, 55.7% of the staff had 11-20 years as their work experience. This also revealed that there is more experienced staff in the Kainji Lake National Park and this experience will enable them to perform their job very well.

The finding of this study revealed that there are presence of banditry and illegal logging activities in Kainji Lake National Park. This agrees with finding of Ajidahun, (2019) that majority of reserve normally encounter illegal logging activities.

The effects of the banditry and illegal logging activities as recorded in this study includes; destruction of habitat, decline in wildlife population, loss of biodiversity etc. Biodiversity species have different status in their natural environment. Some species could become endangered, critically endangered, rare, vulnerable and even extinct among others depending on the already status of the species before the crisis. Banditry could lead to local populations of biodiversity resources being utilized beyond carrying capacity.

*Conclusion:* This study confirms that there is banditry and illegal logging activities in Kaniji Lake National Park. The species of tree and animals that are mostly affected by illegal logging are *Adansoniadigitata*, *Azzeriafricana*, *Milicia excels* etc. The animal species includes Grim duiker, Guinea fowl, Bushbuck, Rabbit etc. The effects of banditry and illegal logging on wildlife conservation destruction of habitat, decline in wildlife population, loss of biodiversity and climate change. Local communities and other stakeholders at all levels should be sensitized and educated on the values of the Park.

*Declaration of Conflict of Interest:*The authors declare no conflict of interest

*Data Availability:*Data are available upon request from the corresponding author or any of the other authors.

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