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EFFECT OF FOREST FIRE ON WILDLIFE SPECIES AT YANKARI GAME RESERVE

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ABSTRACT

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Fifty (50) well-structured questionnaires were randomly distributed to the staff of Yankari National game reserve in Bauchi state-Nigeria to study the effect of forest fire on wildlife species. The study revealed that respondent's age ranges from 20 - above 50 years old, grouped in to four classes, the class of 41-50 had the highest representation for all the respondents, having a total of (36%), their educational attainment in the reserve was discouraging (40%) with secondary certificate while (30%) attended tertiary institution. However (30%) are with the reserve working for 15 years. The study also revealed that awareness on incidence of forest fire, level of damage and possibility of its control in which (60%) are fully know legible on forest fire, (58%) of the respondent reported positively on its occurrence in the reserve, The result also showed that level of damage can either be very high (0%), high (50%) low (20%) or medium (30%), much more (90%) of the respondent believe to be control effectively, Reasonable number of the respondent (98%) agreed on its severity in the dry season. According to the respondents major forest fire causes could be deliberate setting, carelessness, ignorance, negligence, accident, and natural causes (24%), (18%), (16%), (16%), (12%), (12%) respectively. Most if not all of the respondent (64%) disagree on forest fire to lead to extinction of wildlife species.

INTRODUCTION

Nigeria is situated in West Africa (the coordinates of the center of the country are 10°00N, 8°00E) with a total area of 923,768622 km² land with a total population of more than 130 million inhabitants. (IFFN, 2006) Nigeria is the most populous country south of the Sahara. The land use pattern of the land area is about 33% arable land, 44% permanent pasture, 12% forest and woodland, 3% permanent crops and 8% for other land use pattern. Cocoa, other cash crops, timber,

grasses and other useful and non- useful vegetation are destroyed annually in Nigeria by wildfire however quantified estimate of losses due to wildfire are not presently available (IFFN, 2006)

In the dry season, wildfire are a constant threat to the Savanna bush land and forest ecotypes in Nigeria. During this period the soil become perched, the vegetation desiccated and the forest and savanna ecotypes, therefore become ready fuel waiting for the crucial ignition to flare up (IFFN, 2006)

Increased wild fire hazard is associated with high temperature, low humidity, high fuel loads and variable harmattan winds (Balogun et al, 2004). In every part of Nigeria, burning represent a useful cultural tradition that cannot be done away with. Fire is used as a work tool generally by a rural population, fire serve for land clearing for agricultural purposes, disposal of water, pasture management for livestock, honey gathering and animal tracking and hunting. These practices are common in most countries in West Africa forest covered by dry forest, or savanna from guinea to Nigeria. The majority of wild fire in Nigeria is caused by human activities and lightening fires are very rare because these occur mainly in the rainy season. The majority of damaging fire are observed from January onward, due to the high temperature during this period (above 35°c) and also to the influence of the hot and dry harmattan winds flowing from north to south between December and March. A wildfire is an uncontrolled fire in an area of combustible vegetation that occurs in the countryside or a wilderness area. (CALD, 2008) However the importance of fire varies from one zone to another. Therefore, the area situated above latitude 10°N in Nigeria experience more wild fire, mainly because this is the savanna eco-zones with the shorter duration of rainfall and a longer period of dryness (IFFN, 2006). In line with the above this study is aimed at investigating the effect of forest fire on wildlife species in Yankari national game reserve.

METHODOLOGY

Description of the Study area

This study was conducted in Yankari National Park, which is a large wildlife park located in the south-central part of Bauchi State, in northeastern Nigeria (Olokesusi, 1990). It covers an area of about 2,244 km² (870 mi²) (Green and Haruna, 2009). It is composed of savannah grassland with well-developed patches of woodland. It is also a region of rolling hills, mostly between 200m and 400m. Kariyo Hill, is the highest point at 640m. The park lies between Coordinates 9°45'16"N 10°30'37"E / 9.754433°N 10.510317°E with

Annual rainfall in the park is between 900mm and 1,000mm. (Odunlami, 2003) The rainy season is from May to September. Temperatures range between 18C and 35C. During the dry season, the harmattan wind blows from the Sahara, often bringing dusty skies and night temperatures fall as low as 12C. The hottest period falls in March and April, when temperatures can rise above 40C in the day. In the dry season, larger wildlife in the park depends on the Gajiriver and its tributaries for survival (Olokesusi, 1990).

Sample/sampling procedure

Fifty staff (50) of Yankari game reserve were purposively selected for the effect of wildfire in the reserve in which each staff were given a questionnaire to filled while others are interviewed, a total of fifty (50) well-structured questionnaire was used altogether.

Data analysis

Data from this research were manage using Microsoft Excel 2007 and thereafter analyzed by simple descriptive statistics (percentage).

RESULTS

Table 1 showed demographic information of respondents on effect of forest fire in Yankari game reserve. The results showed that respondent's age ranges from 20 – above 50 years old, grouped in to four classes, the class of 41-50 had the highest representation for all the respondents, having a total of (36%) followed by class of 31-40 with (32%) followed by 20-30 with (18%) while 50 - above (14%). The results indicated that the educational attainment of the respondents in the reserve was discouraging (40%) with secondary certificate while (30%) attended tertiary institution (20%) and (30%) with no formal and primary certificate respectively. However (30%) are with the reserve working for 15 years while (24%) for 5 and above 5 years respectively only (22%) worked for ten years.

Table 2 showed awareness, incidence of forest fire, level of damage and possibility of its control. (60%) are fully know legible on forest fire, (40%) are un- aware of it, (58%) of the respondent reported positively on its occurrence in the reserve, while (42%) with negative respond.

The result also revealed that level of damage can either be very high (0%), high (50%) low(20%) or medium (30%), much more (90%) of the respondent believe to be control effectively, only (10%) with the opinion of un-control nature of forest fire.

Table 3 showed season of forest fire severity, its major causes and relationship to wildlife extinction. Reasonable number of the respondent (98%) agreed its severity in the dry

season (0%) rainy season while (2%) for both season. According to the respondents major forest fire causes could be deliberate setting, carelessness, ignorance, negligence, accident, natural causes (24%),(18%),(16%),(16%), (12%),(12%) respectively. Majority of the respondent (64%) disagree on forest fire to lead to extinction of wildlife species, while (36%) agree.

Table 1:Biodata of respondents

Parameter	Respondents	Percentage
Age		
20-30	9	18
31-40	16	32
41-50	18	36
50 and above	7	14
Educational Status		
No formal education	10	20
Primary school	5	10
Secondary school	20	40
Tertiary Institution	15	30
Years of service		
5 years	12	24
10 years	11	22
15 years	15	30
Above 50 years	12	24

Table 2: Awareness and incidence of forest fire, level of damage and possibility of its control in study area

Parameter	Respondents	Percentage
Awareness		
Yes	30	60
No	20	40
Incidence of occurrence		
Yes	29	58
No	21	42
Level of damage		
Very high	-	-
High	25	50
Medium	15	30
Low	10	20
Possibility of control		
Yes	45	90
No	5	10

Table 3: season of forest fire severity, its major causes and relationship to wildlife extinction in the study area

Parameter	Respondents	Percentage
Season		
Dry season	49	98
Rainy season	-	-
Both season	1	2
Major causes		
Carelessness	8	18
Ignorance	6	12
Negligence	6	12
Deliberate setting	12	24
Accident	10	16
Natural causes	8	16
Relationship to extinction		
Yes	18	36
No	32	64

CONCLUSION

As it has been clearly shown in this research forest fire need to be taken in to cognizance because of the level of damage it causes.

Government should however provide sophisticated equipment's for wildfire control and well trained personnel for effective management and reduction of its effect.

REFERENCES

- Balogun, A. A, (2004) Development of a national wildland fire inventory and fire disaster management action plan for Nigeria – in the prevention consortium Applied Research Grants for Disaster Risk Reduction, A compendium of project reports compiled by Asian Disaster preparedness centre ADPC, Cranfield disaster management centre CDMC and university of Wisconsin – Disaster management centre – UWDMC.
- Cambridge Advanced Learner's Dictionary, Third Edition. Cambridge University Press; 2008. ISBN 978-0-521-85804-5.
- Green, A.A and S. Z.Haruna, (2009) Yankari journal on decline status as national park and back as a game reserve volume I- VI
- Odunlami, S. S, (2003) An Assessment of the Ecotourism Potential of Yankari National Park, Nigeria. Ecoclub.com E-Paper Series, Nr. 7, April 2003
- Odunlami, S.S.S. (2000): Parks: Vanguard of Ecotourism Promotion. The Host Magazine Vol 2, No 1 pp 25
- Olokesusi, F. (1990): Assessment of the Yankari Game Reserve, Nigeria: Problems and Prospects. Butterworth Heineman Ltd., pp 153–155