



Awareness of wildlife conservation and ecotourism management among public secondary school students in Makurdi metropolis, Nigeria

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Abstract

Knowledge of wildlife related matters have been applied over time to access the level of people approach to wildlife conservation and management. The study focused on the level of awareness of public secondary school students on wildlife conservation and ecotourism education and their willingness to support conservation. Twenty-one public schools were enlisted (6 situated at North bank and 13 at South bank). Nine (9) and four (4) schools were selected at South and North bank using 60% sampling intensity through balloting. The total sampling size was four hundred and sixty-eight (468) respondents. Data were analysed using descriptive statistics. Five-point Likert rating scale was used to determine respondent's perception about wildlife conservation and ecotourism management. Socio-economic characteristics of respondents showed that most (56.4%; 66.5%) were females within the ages below 15 years. The common professions of parents of the respondents were Civil servants (41.0%) and farmers (30.03%). The study revealed that most (29.7% and 75%) of the students have knowledge of the definition of wildlife and ecotourism. The source of information on wildlife and ecotourism related issues was mostly from cable network (30.6%), Facebook (21.6%) and parents/friends (20.5%). Similarly, 42.9% of the students disagree to the view that wild animals cannot be exhausted and strongly agreed (43.6%) that ecotourism promote human non-consumptive utilization of wildlife. Majority (91.2%) of the students have never participated in conservation and ecotourism programmes before. Though, willing to participate. Also 77.8% opted that wildlife is taught in their school but under other subjects. Most (43.6% and 55.7%) were not interested in wildlife club because opportunity have not been given and that wildlife is seeing dangerous. We encourage continuous conservation education programmes and practical approach towards wildlife related matters.

Keywords: wildlife, awareness, conservation, ecotourism, secondary students

Introduction

Knowledge and attitude of people towards wildlife conservation and ecotourism management is a primordial factor and strategy for successful wildlife sustainability (Valentine *et al.*, 2011)^[17]. The word wildlife can also be termed biodiversity. It is the existence of a large number of different species of fauna (animal) and flora (plant) which makes a balanced environment. Wildlife conservation is basically an activity which humans make conscious deliberate efforts to protect plants and other animal species and their habitats. Wildlife, ecotourism activities and habitat conservation has become increasingly important in the 21st century (Meadows, 2011)^[10]. Wildlife conservation is very important because biodiversity play an imperative role in maintaining the ecological balance and contribute to human quality of life (Keith *et al.*, 2014). The goal of wildlife conservation is to guarantee the survival of these species, and to educate people on living sustainably with other species, while providing both consumptive and non-consumptive (ecotourism) utilization.

Wildlife conservation is a very popular approach in environmental science and has long remained a central theme in ecology and rangeland. Conservation of biodiversity could either be in-situ or ex situ. It is critical to the maintenance of healthy environment, and its role in meeting human needs directly while maintaining the ecological process upon which our survival depends is enormous (Dushyant *et al.*, 2011)^[3].

Ecotourism describes an active and extensive sightseeing in a naturally protected and culturally valuable area - which protects harmony of ecosystems and local community's separateness. One among its many functions is to provide financial means for effective protection of natural and cultural heritage and, at the same time, brings really social-economic benefits to local community. With the global decline of wildlife resources, it then becomes important for human populations, who are active users of these resources to find ways to conserve or ensure a sustainable use of the available resources. Conservation education then became a very relevant tool to drive and encourage people especially among the young minds who are active users of wildlife related resources to understand and appreciate these resources and also learn how to conserve them for future use (Mohammed, 2020)^[11]. One of the ways to achieve this is to create awareness where it is lacking and increase awareness where it exists through education using various workable means (Meadows, 2011)^[10]. This will promote

environmental protection effort, foster sustainable behaviour, improve public support and minimize vandalism and poaching (Meadows, 2011; Ijeomah *et al.*, 2019) ^[10, 5].

The paper focus on the awareness of wildlife relates issues among public school students in Makurdi Metropolis. Seeking specifically to; determine the socio-economic characteristics and level of awareness by the students. Their knowledge and information sources on wildlife conservation and ecotourism management and their willingness to participate in wildlife conservation and ecotourism activities.

Materials and methods

Study area

Makurdi metropolis is the headquarters of Makurdi Local Government Area and Capital of Benue State, located in the Middle Belt region of central Nigeria. It lies between latitude 7°38'N - 7°50'N, and longitude 8°24'E and 8°38'E. It is traversed by the second largest river in the country, the River Benue and is within the heartland of the tropical guinea zone with an annual average rainfall of 1173 mm (Abah, 2012; Ikyaagba *et al.*, 2020) ^[1, 6]. The climate is the tropical wet and dry type with rainy season spanning from April to October and dry season (November to March). Makurdi has a temperature range between a minimum of 27.8°C to 28.2°C and a maximum of 30.1°C to 34.1°C with a land mass of about 800 km² (Ologunorisa and Tor, 2006; BNSG, 2021). The town is divided by the River Benue into North and South banks, which are connected by two bridges; the railway and the new dual carriage bridge (Goon *et al.*, 2011). The vegetation is the guinea savannah type, but has been adversely affected by human activities leading to the clear-cutting of tree cover in many parts of the town. The human population is estimated at 517,342 (Shabu *et al.*, 2021) ^[16].

Data collection and sampling procedure

Reconnaissance survey was conducted to determine the numbers of Public Secondary Schools (PSCMM) in Makurdi Metropolis. The list of PSSMM was obtained from the Teacher Service Board. Twenty-one (21) Public Secondary Schools were enlisted; 6 schools fall into North bank while 15 schools in South bank. Simple Random sampling method was carried out whereby 9 schools were selected from South bank and 4 schools were selected from North bank making a total of 13 schools using 60% sampling intensity.

Semi structured questionnaire was administered to the students only of the selected schools. six students were targeted in each of the class (from JSS1 to SSS 3) on the basis of first contact. A drop and pick method with the support of the head teacher of respective schools/class as described by Meadows (2011) ^[10] was adapted. A total of 468 questionnaires were given and retrieved. Hundred percent response rate was recorded across the sample public secondary schools.

Data analysis

Data obtained was analyse using descriptive statistics and result were presented in tables and figures.

Table 1: List of public secondary schools in Makurdi metropolis

S/N	Schools	Sampled/ Not sampled
North bank		
1	OgiriOko Memorial Secondary School, Makurdi	Sampled
2	Command Day Secondary School NASME, Makurdi	Sampled
3	Tilley Gyado College, Makurdi	Sampled
4	Golden College Yagba, Makurdi	Sampled
5	Government Secondary School, North Bank Makurdi	Not sampled
6	Government Secondary School, Tatyough.	Not sampled
South bank		
1	Government College. Makurdi	Not sampled
2	Government Model College	Sampled
3	Gaadi Comprehensive College Makurdi	Sampled
4	Anglican Secondary School, Makurdi.	Sampled
5	Government Secondary School NAF Base,	Sampled
6	Government Comprehensive College, Makurdi	Sampled
7	Carm Wisdom College, Makurdi.	Sampled
8	NKST Secondary School, Makurdi.	Sampled
9	Mount Saint Gabriel Secondary School, Makurdi.	Sampled
10	Padopads Harmony Secondary School. Makurdi	Not sampled
11	Mount Carmel College, Makurdi	Sampled
12	Arabic Comprehensive Secondary School. Makurdi	Not sampled
13	Government Girls College, Makurdi	Not sampled

Source: Teaching Service Board (TSB), Makurdi

Results

Socio-economic characteristics of sampled respondents

The result of the demographic characteristics of the study population is presented in Table 2. The dominant gender was female with (56.4%), while male had 43.6% of the sampled population. Majority (66.5%) of the students fall within the age group below 15 years, followed by respondent between 16-20 years with (28.6%) and the least was age group above 20 years. The study comprises of different ethnic groups. The majority (46.4%) of the students are Tiv, (19.7%) are Igbo while the least was Hausa (3.6%). Student category and class had equal percentage of 50% and 16.7%, respectively. Most (41.0%) of the students' parent occupation were civil servant (41%) followed by farmers (30.03) and the least were technicians (2.3%).

Awareness level of wildlife conservation and ecotourism management approach among the students

From the result given in Table 3, the findings revealed that, 29.7% and 22.7% agreed and strongly agreed to the concept of wildlife, while the least (6.7%) were undecided. The majority (63.3%, 29.9% and 1.9%) of the respondents disagree, strongly disagree and undecided respectively that goat, sheep and cow are some example of wildlife. Also (42.9%, 20.1%) and the least percentage (2.6%) disagree, strongly disagree and were undecided that wildlife animals cannot be exhausted. Similarly, (75%, 21.4% and 3.6%) of the respondents, agreed, strongly agree and disagree with the concept of ecotourism. In the same vain, 43.6% 42.3% and the least 0.2% of the respondents strongly agree, agree and undecided that ecotourism promote human non-consumptive utilization and other environmental resources. More so, (63.2%, 32.8% and 3%) agree, strongly agree and strongly disagree that wild animals and tree may likely become extinct in the nearest future. On the killing of carnivores animals like lion to increase number of other animals, about (54.7%, 24.5%) and the least (9.8%) of the respondent agree, undecided and strongly disagree. The majority (39.1%) agreed and some (26.3%) were undecided to the fact that, the primary purpos of tree planting is to beautify the environment for tourists and other environmental related services. Similarly, (63.9%, 34% and 2.1%) of the respondents disagree, strongly disagree and undecided respectively that, since environment can clean itself, human waste does not cause a problem to wild animal.

Table 2: Demographic characteristic of the study respondents

Variables		Frequency	%
Gender	Male	204	43.6
	Female	264	56.4
Age Groups Years	Below 15	311	66.5
	16-20	135	28.6
	Above 20	22	4.7
Ethnic Groups	Tiv	217	46.4
	Yoruba	34	6.5
	Igbo	103	19.7
	Hausa	17	3.6
	Others	18	3.8
Student Category	Junior	234	50
	Senior	234	50
Class Level	JSS1	78	16.7
	JSS2	78	16.7
	JSS3	78	16.7
	SS1	78	16.7
	SS2	78	16.7
	SS3	78	16.7
Parent Occupation	Civil Servants	192	41.0
	Farmer	142	30.03
	Trader	86	18.4
	Technicians	12	2.3
	Others	36	8.9

Table 3: Respondents perception on wildlife conservation and ecotourism management

Variables	SD	D	U	A	SA
Wildlife refers to animals and plants outside the direct control of man	81(17.3%)	94(17.9%)	35(6.7%)	139(29.7%)	119(22.7%)
Examples of wildlife include goat, sheep and cow	140(29.9%)	216(63.3%)	-	10(1.9%)	-
Wild animals cannot be exhausted	94(20.1%)	201(42.9%)	12(2.6%)	75(16.0%)	86(18.4%)
Ecotourism is a nature-based tourism that allow	-	17(3.6%)	-	351(75.0%)	100(21.4%)

people to interact with wildlife					
Ecotourism promotes human non consumptive utilization of wildlife and other environmental resources	-	64(13.7%)	1(0.2%)	198(42.3%)	204(43.6%)
Animals and trees alive today are most likely to become extinct in the nearest future	14(3.0%)	-	-	296(63.2%)	158(32.8%)
Killing animals like lions that eat others may increase the number of other animals	46(9.8%)	52(11.1%)	114(24.4%)	256(54.7%)	-
The primary purpose of tree planting is to beautify the environment for tourist attraction and other environmental services.	63(13.5%)	-	123(26.3%)	183(39.1%)	99(21.2%)
Since the environment can clean itself, human waste does not cause a problem to wild animals	159(34%)	299(63.9%)	10(2.1%)	-	-

Key: SD= Strongly Disagree, D= Disagree, U= Undecided, A= Agree, SA= Strongly Agree
Source of knowledge and awareness about wildlife conservation ecotourism management

The result indicated in figure 1 reveals the sources of knowledge and awareness about wildlife conservation ecotourism management among the study population. Majority (30.6%, 21.6% and 20.5%) of the respondent got their knowledge about wildlife conservation and ecotourism management mostly through cable network, Facebook and parents/friends, respectively. While other sources and books (6%) constitute the least source of information.

Inclusion of wildlife conservation and ecotourism in the school curriculum

The result of wildlife conservation and ecotourism related matters inclusion in the school curriculum is presented in Table 4. Majority (77.8%) of the responded indicated yes and also stated that, the subject matter (wildlife and ecotourism management) is taught under another subjects. Specifically, with the subjects like Basic science (48.5%), Agricultural science (25.6%), Social studies (17.1%) and Biology (8.8%), respectively. The majority (88.0%) of the study population revealed that, they have youth or social club in their school, though did not solely focus towards conservation of wildlife and ecotourism activities. It was stated also that, about (68.8%) of the respondents are willing to participate in wildlife conservation activities like bird watching, visit to zoo, National Park and other protected areas if given the opportunity.

Participation, willingness and knowledge about protected areas

The result of the participation, willingness and knowledge about Protected Areas their locality is presented in Table 5. The result indicated that, majority (91.2%) and (18.6%) have not participated in any conservation and ecotourism project before and are not willing to stop buying some wildlife product to save wild animals. In the same vain, most (91.2%) of the respondent also declined the knowledge of any protected area around them and however not visited any Protected area destination. But some however stated areas like Makurdi Zoological Garden, Ikwe Wildlife Park as some of the places they visited before within the state.

Respondent reasons for not been interested in wildlife conservation and ecotourism management club

The respondent reasons for not been interested in wildlife conservation and ecotourism management club given in Table 6 revealed that, about (45%, 22%, 9.3% and 13%) represented very high, high, medium, low and very low on their reasons of not being able to engage on other activities other than their academics. Some student show very low level of not been interested in wildlife conservation (58.6%). While some attributed their lack of interest to the dangerous act of wild animal (55.7%)

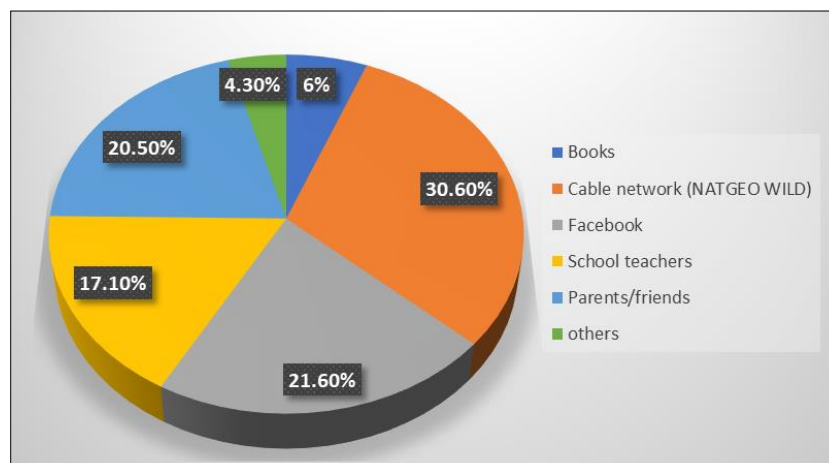


Fig 1: Sources of Information about Wildlife Conservation and Ecotourism Management

Table 4: Inclusion of wildlife conservation and ecotourism in the school curriculum

Variables	Frequency	Percentages
Are you taught about wildlife and ecotourism management in your school?		
Yes	364	77.8
No	104	22.2
If yes, is it taught as;		
Sole Subject	-	-
Under another subject	364	77.8
Which subject(s) is it taught with		
Agricultural science	120	25.6
Basic science	227	48.5
Social studies	80	17.1
Biology	41	8.8
Others	-	-
Do you have a youth or social club in your school?		
Yes	412	88.0
No	56	12.0
If yes, is there any aimed towards conservation of Wildlife?		
Yes	-	-
No	412	88.0
Are you willing to participate in wildlife conservation activities e.g. bird watching, visit to Zoo, National park or other protected areas		
Yes	322	68.8
No	146	31.2

Table 5: Participation, willingness and knowledge about protected area in your community

Variables	Frequency	Percentages
Have you ever participated in conservation and ecotourism project before?		
Yes	41	8.8
No	427	91.2
Will you be willing to stop buying wildlife product to save animal lives?		
Yes	100	21.4
No	368	78.6
Are there protected areas in your environment within the state for keeping animals and plant save from human use?		
Yes	41	8.8
No	427	91.2
If yes, name some of the protected areas		
Makurdi zoological garden- Makurdi LGA		
Ikwe Wildlife Park- Gwer-East		
Mbaav 1 and 2 forest reserve- Gwer-East		
Ipinu-Igede forest reserve- Oju LGA		
Yaaiwa forest reserve- Kwande		
Have you ever visited any the protected area before?		
Yes	203	43.4
No	265	56.6
If yes, state the ones you visited most		
Makurdi zoological garden		
Ikwe Wildlife Park		

Table 6: Respondent reasons for not been interested in wildlife conservation and ecotourism management club

Reasons	VH	H	M	L	VL
I do not have time to engage in other activities other than my academics	63(45%)	12(86%)	32(22.9%)	13(9.3%)	19(13.6%)
There are no opportunities to engage in such activities	61(43.6%)	21(15%)	39(27.9%)	17(12.1%)	2(1.4%)
I am not interested in wildlife related activities	32(22.9%)	18(12.9%)	6(4.3%)	2(1.4%)	82(58.6%)
My parents would not allow me to participate	43(30.7%)	45(32.1%)	31(22.1%)	19(13.6%)	2(1.4%)
Wildlife is dangerous and can harm me	78(55.7%)	54(38.6%)	2(1.4%)	1(0.7%)	5(3.6%)

Key: VH=Very High, H=High, M=Medium, L=Low, V=Very Low

Discussion

Wildlife conservation and ecotourism issues are clearly of concern to the young minds as noted in the findings. Knowledge and awareness wildlife conservation and ecotourism management is treasurable to promoting sustainability. The high number of female respondents was an indication that female child is dominated in the study. This differs from the findings of Ikyagba *et al.* (2020) ^[6], in the same study area though, our focus was only on public secondary school. The mean age of the students was below 17 years, an indication of early child education. Similar age was reported by Ikyagba *et al.*, (2018) in the same study area.

The findings also revealed that most students are knowledgeable about wildlife conservation and ecotourism management and were willing to participate in conservation and education program. This was acquired through cable network, internet, parents/friends and their teachers. Mostly internet and mass media are effective ways for creating conservation and ecotourism development information (Janeiro, 2004; Prokop *et al.*, 2010; Marina *et al.*, 2019) ^[7, 9]. This could be easy of access and advancement in technology in our educational sector. This shows the importance of media influencing the students. Teacher/ educator are also seen as an effective individual in delivering knowledge or change agents.

Family background, time, perception and feelings could also be factors influencing the students in term of being interested and involve in any wildlife conservation and ecotourism club in their schools. However, Oladeji (2016); Willian *et al.* (2017); Oyeleye *et al.* (2021) ^[14] opted that young minds and local communities' participation promote effective conservation objectives of relevant organization and groups.

Conclusion and Recommendations

The study dealt with awareness of wildlife conservation and ecotourism management among public secondary Students. Technically, cable network, internet, parents/friends and teachers are the effective means in communicating wildlife related issues among the young minds. Generally, most of the students are knowledgeable about wildlife conservation and are willing to participate. However, some opted out due to the danger pose by wild animals. The knowledge and exposure about wildlife should be nurtured since young age so that awareness of its Importance can be understood and applied from generation to generation. We recommend continuous and grass root advocacy towards wildlife.

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