NEW CONCEPT IN WILDLIFE MANAGEMENT: URBAN WILDLIFE IN HOMESTEAD HABITAT IN PORT HARCOURT, RIVERS STATE.

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Abstract

This study was conducted to ascertain the presence,status and distribution of urban wildlife in homestead habitats in Port Harcourt,Rivers State, Nigeria.It was also aimed pressenting a new concept in wildlife management.

The result showed that 41% of respondents were male and 59% female. The youths (18-30years) made up of 28% adult, (31-50years) formed 27% of respondents and the aged(51-70years)was 45% . The majority of respondents were self employed (43%), 23% were students and 34% civil servants. The results also indicated that some species were seen frequently on every day basis. 65% agreed to this while 35% agreed seeing them once in a while within the two months of sampling. On the habits, respondents that agreed, wildlife were seen in houses had the highest percentage 50%,followed by closely by shop 30%, offices 18% and other environment were the lowest of 8%.These species that were observed as parasites by respondents included bats, mosquitoes, flies , millipedes, centipedes, cockroaches, lizards, frogs, grasshopper, wasps, snakes and others . Contrary ,those categorized as free living or harmless were to be protected include grass cutters, crabs . 33% agreed to this , 67% disagree they should be killed 61%. These species were found in micro-habits like houses and other living premises and in micro-habitats such as openings, cracks, walls and trees and on ceillings . Among wildlife encountered, insects were the mostly observed with 28%, closely followed by reptiles with 26% followed by birds (26%), mammals were 8% while the least was amphibians with 8%. In conclusion, wildlife and nests found in our environments should be protected not destroyed and conservation of wildlife should be responsibility of everyone.

INTRODUCTION

Wildlife use of urban habitats is a relatively new field of study and presently no standard means of evaluating either wildlife use or the value of urban habitat is widely available. It is generally accepted and well documented that urbanization has a profound impact on wildlife and habitat. (Kellert, 1996, Conover and Conover, 1997). Recent scientific research has responded in kind, and a growing knowledge base confirms that "All urban areas have the potential to contribute to conservation of wildlife diversity" (Marzuluff and Rodewald 2008). The increase in human settlement density and associated intensification of land use, has a profound and lasting effect on the natural environment and wildlife habitat (Mckinney, 2002, Blair, 2004, Marzluff, 2005, Munns, 2006) and is a major cause of native species local extinctions and is likely to become the primary cause of extinctions in the coming century (Marzluff *et al.*, 200l). Cities are typically located a long rivers, on coastlines, or near large bodies of water. The associated flood plains and riparian systems make up a relatively small percentage of land cover in the Western United States, yet they provide habitat for rich wildlife communities (Knopt, *et al.*, 1988), which in turn provide a source for urban habitat patches or reserves. Consequently, urban areas can support rich wildlife communities. In fact, species richness peaks for some groups, including song birds, at an intermediate level of development (Blair, 1999, Marzluff, 2005).Protected wild areas alone cannot be depended on to conserve wildlife species (Shaughnessy and O'Neil, 2001). Residents of urban and suburban areas place a higher value on conservation than rural residents (Kellert, 1996), Conover and Conover 1997), conservation of urban wildlife habitat provides economic, educational, environmental, and personal enrichment benefits to urban dwellers. Urbanization without subsequent preservation of natural areas leads to fewer wildlife-human interactions in cities, where residents tend to encounter biological uniformity in their daily lives (Miller, 2005), and as a result diminishes the benefits derived from urban natural areas. Recovery from mental fatigue and stress may be derived from exposure to a small natural area such as a backyard garden (Kaplan and Kaplan, (1989), Urich *et al.*, (1991). More than two decades of literature documents the value that humans place on wildlife and the natural environment in general (Johnson 1988, Stern et al. 1995, Manfred 2008). Land Use Code (LUC) "States that a species may use a habitat or a structural component of the habitat for all or part of its lifecycle, and may adapt to use various habitats". Habitats may perform a specific function for a species or multiple species. Habitats of particular concern are those that occur in limited amounts and are highly vulnerable to disturbance or alteration. Habitat in the urban environment includes both natural and man-made elements. As is the case for all habitat, it is any feature or setting from which a species or individual animal could derive some use or benefit during all or part of its lifecycle. Urban habitats is often isolated, fragmented and degraded, with disrupted water flow and nutrient cycling due to structures construction. (Marzluff 2001). Urban habitat may, however, include buildings, gardens, lawns, right-of ways invasive vegetation infestations, utility wires and structures and other artificial features. As well, even small patches of native vegetation in an urban setting are potential wildlife habitat. (Marzluff, 2001). Thus, any vegetated area and all natural and man-made features that may be used by wildlife should be considered potential wildlife habitat. Habitat features are natural or man-made characteristics of the environment serving a particular use to an animal or species.The term has some overlap with both habitat and habitat type, as features may include ponds, streams, wetlands or other generally larger- scale part of the landscape, Habitat features frequently are nest, year-round water sources and foraging perches.Common habitat features are large snags, downed wood, cliffs, steep banks, vernal pools, caves, and brush or rock piles, burrows. In urban habitat, features commonly include man-made structures such as telephone poles and wires, abandoned buildings, caves, chimneys, bridges, and ledges- (O'Neil and Johnson 2001). Habitat type is based on actual conditions and consequently can be mapped and is assumed to contain all the essential needs for a species maintenance and based on the similarity of many wildlife species using a suite of vegetation types (LUC 20.50 024H). Following Donnelly and Marzluff (2004) impervious surface makes up the majority of land cover, although the minimum 60% employed in the aforementioned study may vary somewhat. Green space is minimal in this designation, similar to the 20% or less specified by Marzluff et al (2005). It is generally confined to small city parks and residential and commercial landscaping. Suburban landscapes are dominated by single-family homes on residentially zoned lots. Percent cover by impervious and treed surface loosely follows Donnelly and Marzluff's (2004) 20-60% and 22% or greater, respectively, for their "urban forest" designation. Green space is largely composed of parks, riparian, corridors, residential landscapes and critical areas and their buffers.Exurban landscape includes areas that are less than 20% impervious surface and more than 70% trees (Donnelly and Marzluff 2004). Non-treed pervious surface make up 15% or less.@@@@Due to the destruction of wild life habitat, this wildlife thrives in urban areas, homestead and built up areas bringing about a new concept in wildlife management. This new concept is that there are wildlife species found in built up areas, urban areas and homestead that are not domesticated. In order to distinguish urban population from rural populations, the distinction between urban and rural areas must be made. There is no single definition of urban areas. Different disciplines such as sociology, demography, economics, public administration and geography define urban areas from the point of view of their disciplines.In recent years, census bodies at the national or international levels and scholars in various disciplines have evolved three types of definition of urban areas: Legal and administrative definitions, definitions using minimum population threshold, functional definitions. The legal and administrative definition of urban areas as distinct from rural areas is a reflection of the laws of any

given country. The urban area in this case derives its legal existence from a charter granted by authority of the government within whose jurisdiction the place is located. The usefulness of any administrative or legal definition of urban centres depends on the frequency with which the boundaries and locality sizes are reviewed. Urbanization is one common indicator which has been used on different parts of the world is population size. Often the minimum population figure which a place must have to qualify as an urban area is specified. The definition of urban areas on the basis of functional structure may be regarded as the qualitative definition of urbanity because it is based on the attributes of the settlement. This definition not rarely the absolute number of people in such a place but also the character and composition of the population for example the heterogeneity, occupation, structure and the economic base. Urban areas are supposed to be characterized by a variety of functions associated with social, cultural, industrial, commercial, religious, artistic, educational, military, political and administrative activities further more, in view of the demand of urban functions on the limited capacity of individuals, the function also depend upon a work force with increasing degrees of specialization (Okpala, 1994). According to Oxford dictionary, homestead is a house with surrounding land and buildings, while habitat is the place including physical and biotic conditions, where a plant or animal usually occurs and fundamentally linked to the distribution and abundance of species. Then there is need for us to know the definition of wildlife habitat. @@@@For the purpose of this study or research, we will only talk about animals (reptiles, amphibians, birds, insects and mammals). However, all animals existed in the wild state until man began the domestication of some of the species such as goats, cattle, dogs and cats amongst others. At this point, it is important to identify and define what we mean by the term domestication. Domestication is the process by which plants and animals are genetically modified over time by humans for traits that are more advantageous or desirable for humans (Wikipedia the free encyclopaedia). For a better understanding of all we have talked about there is need for us to have knowledge of what wildlife management is all about. Wildlife management attempts to balance the needs of wildlife with the needs of people using the best available science. Wildlife management can include game keeping, wildlife conservation and pest control (Wikipedia the free encyclopaedia). Wildlife conservation aims to halt the loss in the earth's biodiversity by taking into consideration ecological principles such as carrying capacity, disturbance and succession and environmental conditions such as physical geography, pedology and hydrology with the aim of balancing the needs of wildlife with the needs of people. Game keeping is the management or control of wildlife for the well being of game and may include killing other animals which share niche or predators to maintain a high population of the more profitable species such as pheasants introduced into woodland. In his 1933 book, "Game management". Aldo Leopold, one of the pioneers of wildlife management as a science, defined it as "the art of making land produce sustained annual crops of wild game for recreational use".

Pest control is the control of real or perceived pests and can be for the benefit of wildlife, game keepers or safety reasons. Wildlife management has become an integrated science using disciplines such as Mathematics, Chemistry, Biology, Ecology, Climatology and Geography to gain the best results. Urban wildlife have been given little or no attention in Nigeria due to the fact that the average Nigerian sees it as of little significance to man. This work is to bring to the knowledge of the society that wildlife exist in our urban areas and homestead and to encourage more research and documenting of the habitat in which wildlife exist in built up areas. Such study will not only help to create awareness but also improve knowledge that urbanization has a profound impact on wildlife in homestead habitat conservation. This study paid a particular attention to urban areas and homestead habitat species of local importance, so designated because they are in danger of extinction; they have special recreation, commercial, tribal or other value and their continued existence in urban areas is dependent on protections that are not adequately addressed by other jurisdiction. The general objective was to confirm the presence, status and distribution of wildlife in homestead habitat and built up areas.The specific objectives were: To present new concept in wildlife management.To initiate study on the incidence and distribution of urban wildlife. To document the general micro and macro habitat in which wildlife exist in built up areas.

MATERIALS AND METHODS

STUDY AREA

This study was carried out within the urban and built up areas within main city of Port Harcourt Local Government Area (PHALGA).

The study area lies within latitude $4^0$43 and $4^0$54 N and longitudes $6^0$56 and $7^0$03E (18 meters) above sea level with a mean annual rainfall of over 2,000nm and mean annual temperature of about 29^0C (Trinya, 2011). Port Harcourt city covers an area of 186km^2 (718sq mi). Land area of 170km^2 (65.6sq mi), water, 16km^2 (6.2sq mi) and metro, 462km^2 (178.4 sq mi). The population of Port Harcourt is estimated at 1,620,214 in the year 2007. Port Harcourt urban area is 2.7 million while greater Port Harcourt is almost 3.7 million in population (http://en.wikipedia.org,2009).

Materials: The following materials were used in carrying out this work-

Note book, Pen, Camera, Questionnaires

METHODS

The following methods were used to carry out this work: use of questionnaire administered and personal interviews conducted.
A random observation of the animals around the urban areas and human habitation was done. Also the use of tail tell evidence for example, there were droppings or faecal marks of rat, wallgecko, the nest of insects, birds or the foot print of animals on a soft surfaces and path.
The camera was used to take pictures of the droppings of the animal, nests of insects or the foot print of an animal as well as the animals encountered.

RESULTS

Respondents Demography

The results indicated that only 63% of the hundred copies of questionnaire were retrieved. The results also showed that 41% of those respondents were male and 59% female (Table 4.1). The youths within the ages of 18-30 years made up 28%, adult (31-50years) formed 27% of respondents and the aged (51-70years) was 45% (Table 1).

Table 1: Demography of Respondents

	Frequency	(%)
Sex- Male	26	41
Female	37	59
Total	63	
Age(Years)(15-30)	18	28
(31-50)	17	27
(51-70)	28	45
Total	63	

Field Survey, 2012

Occupation of Respondents

The results showed that occupationally, the majority of respondents were self employed (43%), 23% were students and 34% civil servants (Table 2).

Table 2: Occupation of Respondents Field Survey, 2012

Occupation	Frequency	Percentage (%)
Self employed	27	43
Civil Servants	22	34
Students	14	23
Total	63	

Types of wildlife observed

The results showed that among the species observed or encountered by respondents, insects were the mostly observed with 28%, closely followed by reptiles with 26%, followed by birds (26%), mammals were 8% while the least was amphibians with 8% (Table 3 and Figure 1). Response of these people varies because of the different attitudes: 76% of them agreed killing them if encountered, 12% did not kill. While 73% of respondents agreed discouraging them from coming near them, 7.7% disagreed driving them away. Major reason adduced for killing was that of being harmful causing malaria, stings and death. Forty nine percent (49%) agreed that wildlife found in shop be destroyed valuables in the shops, office and houses, 40% disagreed with this.

Table 3: Distribution of wildlife species

	Number of species observed
Birds	25
Reptiles	26
Insects	28
Amphibians	8
Mammals	13

Field Survey, 2012

Frequency of wildlife observed

The results indicated that some species were seen frequently on every day basis-65% agreed seeing them everyday while once in while (35%) within two months of the sampling (Figure 2).

Frequency of Habitats

The results showed that the evidence of wildlife habitats included shop, office, house and other environment. The study showed actual sighting of the species was 45% while tail tell evidence was 55% (Figure 2).

The house habitat had the highest of 50% followed closely shop (30%) and in offices (18%), while the least place was in other environment that had 8% (Figure 3). These wildlife species live in either macro-habitat in homestead or built up areas. Some were found in micro-habitat in roof top, cracks, ceiling openings, treetops, caves/holes, drains etc (Table 3). These species indicated or classified parasites by respondents include bats, mosquitoes, flies, millipedes, crabs, centipedes, cockroaches, lizards, frogs, grasshopper, wasps, snakes and others. Contrary, some wildlife species that are categorised as free living or harmless was to be protected respondents suggested, 33% agreed with this while 67% disagreed and they should be killed.

Table 3: Habits of wildlife

Wildlife	Macro-habitat	Micro-habitat
Birds	Living premises	Roof top, cracks, ceiling, openings, walls and trees etc
Reptiles	Living premises	Caves, holes, drains, piling
Insects	Living premises	Roof top, cracks, ceiling, openings, walls and trees etc
Mammals	Living premises	Holes
Amphibians	Stagnant water	Grasses

DISCUSSION

The study has shown that the high percentage of those polled were women that agreed to have seen wildlife shows that the women are home keepers who appreciate these wild animals. Amongst the various occupations, the self employed was the highest may be their work places were near fields or open places where these animal either live or nest as opposed in civil service and schools who are always in offices and building as enclosures where these wildlife are frequently seen.

Wildlife built nests or made holes in office, shop, houses or around the environment supports the Land Use Code (LUC) which states that a species may use a habitat or a structural component of the habitat for all or part of its lifecycle, and may adapt to use various habitats". Habitats may perform a specific function for a species or multiple species. Habitats of particular concern are those that occur in limited amounts and are highly vulnerable to disturbance or alteration.

This is new a concept in that many wildlife have migrated from the forests because of deforestation where their habitats are destroyed, so the build nests and share offices, shops, houses and other environment in urban areas as habitats. This trend is a continuous as these fauna are observed almost every day because of this increased migration. This was confirmed by respondents, though they admitted that the wild life were seen in small numbers, they equally claimed that the irksome, parasitic and noxious nature of some the species they were often repelled or killed. Some respondents agreed that some species were friendly and relieves stress, this agrees Kaplan and Kaplan, (1989) that recovery from mental fatigue and stress may be derived from exposure to a small natural area such as a backyard garden.Some of them were useful and contribute to the environment especially their roles in food chain and energy flow and so they should be protected agreed by most of the respondents.This agrees with Miller (2005) that urbanization without subsequent preservation of natural areas leads to fewer wildlife-human interactions in cities,

where residents tend to encounter biological uniformity in their daily lives. Few of them are edible and serve as food to man and even be reared and use as pets. This agrees with Lameed (2008) that grasscutter provides pleasure and are used as pets.

CONCLUSION

The study confirmed people often observed the migratory trend of some wildlife especially insects, reptiles and mammals are thronging to the urban area because of destruction of their habitat-forests. The increase in the nests, faecal product and conspicuous signs of their presence can now be seen in numbers in offices, shops, houses and other environment.

Though they are seen in small numbers their presence indicates that they part of the urban area hence urban forests, grasslands and in places mentioned earlier. Consequently, some respondents admitted that a few wildlife were not useful-parasitic and deadly, handful of them believed that wildlife is integral part of the environment so they should be protected.

RECOMMENDATIONS

1. There should be enlightenment and awareness programme to educate the urban dwellers of the increase in wildlife in the environment.
2. The wildlife and nests found around should be protected not destroyed.
3. Conservation of wildlife should be responsibility of individuals and the public.

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