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CHECKLIST OF URBAN WILDLIFE SPECIES IN RIVERS STATE: A CASE STUDY OF OBIO/AKPOR, PORT HARCOURT AND ELEME LOCAL GOVERNMENT AREAS OF RIVERS STATE

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Abstract

The checklist of urban wildlife species was conducted in Obio/Akpor, Eleme and Port Harcourt Local Government Areas of Rivers State. The checklist is composed of 74 species in 10 classes of wildlife fauna with 46 families. The frequency of occurrence of species in various wildlife species showed that class insecta recorded 29.7% followed by class aves – 27.0%, class mamalia – 13.5%, class reptilia – 9.5%, class amphibia – 6.8%, class gastropoda – 4.1%, class arachnida – 2.7%, class clitellata – 2.7%, class diplopoda – 2.7% and class chilopoda – 1.4%. The study revealed that some wildlife species do exist in urban cities. There is the need to investigate urban wildlife species in different states in Nigeria to know why these species exist in the urban areas rather than the forest is recommended.

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INTRODUCTION

All urban areas have the potential to contribute to conservation of wildlife diversity" (*Marzluff* and *Rodewald* 2008). In the pacific Northwest, native habitat exists to varying existent within even the most densely developed areas. This document summarizes the best available science addressing the impacts of ongoing human development in urbanizing areas and interactions among humans, wildlife and urban natural environment. Urbanization, the increase on human settlement density and associated intensification of land use, has a profound and lasting effect on the natural environment and wildlife habitat (*Mckinney* 2002, *Marzluff* 2005, *Munns* 2006). Urbanization is the major cause of native species local extinction and is likely to be the primary cause of extinction in the coming century (*Marzluff et al*, 2001). A considerable work has been done to assess appropriate methods of managing urban, wildlife populations (especially deer) in the United States of America and in the United Kingdom. But far less attention has been given to urban wildlife population in Nigeria. A checklist of wildlife species in the lower kinabatangan, eastern sabah was recorded during a two year on Nasalis larvatus (*Boonratana*, 1993) and an eleven-month wildlife survey (*Sharma*, 1992) in the region. The main aims of the two year study were to describe the feeding and ranging behaviour and social organization of N. larvatus in relation to its habitat. While studying N. larvatus, many other animal species were also seen, heard or their signs encountered. The main aim of the eleven-month wildlife survey was to record the presence and estimate the abundance of wildlife fauna. Fieldwork to study the behaviour and ecology of N. Larvatus was also conducted from January 1990 to December 1991. The study was carried out at Sukau (118^0 30'E, 5^0 30'N) AND Abai (118^0 22'E, 5^0 04'N) within the lower Kinubatangan region. During this period, the presence of wildlife fauna was recorded both opportunistically and systematically based on actual sightings and on evidence made by the animals such as vocalizations dung, tracks, nest, etc. Opportunistic recording were carried out when conducting river surveys and full-day follows for N. larvatus (*Boonratana* 1993), whereas systematic surveys using the line transect method (*Burnham et al*. 1980) were carried by walking ten one-kilometer long straight line transects (*Sharma* 1992, *Boonratana* 1993). From wikipedia the free encyclopedia, different types of urban areas support different kinds of wildlife. Among the vertebrates, a case is urban great tits, which have been found to sing at a higher pitch than their rural relatives so that their songs stand out above the city noise. Urban silvereyes an Australian bird, make contact calls that are higher frequency and slower than those of rural silvereyes. As it appears that contact calls are instinctual and not learnt, this has been suggested as evidence that urban silvereyes have undergone recent evolution so as to better communicate in noisy urban environment. This has provided them with new opportunities to haunt night-flying birds and bats. Red foxes are also in many urban and suburban areas in the UK as scavengers. They scavenge and eat insects and small vertebrates such as pigeons and rodents. People also leave food for them to eat in their gardens. One fox was even found living at the top of a skyscraper. In some cases even large animals have been found living in cities. Berlin has wild boars, wild roe deer are becoming increasingly common in green areas, in Scottish towns and cities, such as in the Easter house suburb of Glasgow. Moscow has feral dogs, a few of which have even learnt to use the Moscow subway system. Close proximity to avian life has not presented a problem for people in the past, but there are new concerns about the spread of bird flu (the H5NI virus) via infected migratory birds. Some pandemic of global proportions. Numerous animals also live within buildings. The house mouse, a small mammal is specialized for living alongside humans and is found inside buildings. Insects that have sometimes inhabit buildings include the cockroach, the silverfish, and many various species of small beetles.

Many North American species have successfully adapted to urban environments and are thriving. Typical examples include coyotes, rabbits, raccoons, squirrels, opossums, deer and red foxes. This has led to conflict with humans, as these animals open garbage bags in search of food eat food left out for pets, take the pets themselves feed on prized garden plants, dig up lawns and so on. In South America, Marmosets were found living wild in city parks in Brazil. Urban dwelling marmosets tend to return more often to the same sleeping sites than jungle-dwelling marmosets. Urban-dwelling marmosets tend to prefer to sleep in tall trees with high first branches and smooth bark. It has been suggested that they do this to avoid cats. On the cape peninsula near Cape Town in South Africa, human development has been encroaching on baboon habitat for years and the baboons have adapted remarkably well in raiding homes for food. Elsewhere in Africa, vervet Monkeys as well as baboons adapt to urbanization and similarly enter houses and gardens for food. African penguins are also known to invade urban areas searching for food and a safe place to breed. Simons town, next to the popular Boulders Beach had to take action to restrict penguin movement due to the damage they caused. There are reports of leopards roaming suburban areas in cities such as Nairobi, Kenya and Windhoek, Namibia.

In India, the situation is similar to Africa. Monkeys such as Langurs, also enter cities for food and cause havoc in food markets when they steal fruit from the vendors. In Mumbai leopards have entered neighbourhoods surrounding the Sonjay Gandhi National park and killed several people as the park itself is besieged by a surrounding burgeoning population where poaching and illegal wood cutting is rife. Many towns in the UK have urban wildlife groups that work to preserve and encourage urban wildlife. One example is Oxford:- urban areas range from fully urban, areas have little green space and are mostly covered by paving,

tarmac, or building to suburban areas with gardens and parks. Pigeons found scavenging on scraps of food left by humans and nesting on buildings, even in the most urban areas, as the tall buildings resemble that of their natural rocky homes in the mountains. Rats were also found scavenging on food. Gulls of various types also breed and scavenge in various UK cities. A study by the bird biologist Peter Rock, Europe's leading authority on urban gulls, into the rise of herring gulls and lesser black-backed gulls in Bristol has discovered that in 20 years the city's colony has grown from about 100 pairs to more than 1,200. From a gull's point of view, buildings are simply cliff-sided islands, with no predators and lots of food nearby. The trend is the same in places as far apart as Gloucester and Aberdeen. With an endless supply of food more city chicks survive each year to become accustomed to urban living. They in-turn breed even more birds, with less reasons to undertake a winter migration.

From a study conducted on great tits living in 10 European cities and in 10 nearby forests. An analysis was made of the way the birds used songs to attract mates and establish territorial boundaries. Hans Blabbekoon of Leiden University in the Netherlands said that city birds adapt to life by singing faster, shorter, and higher pitch songs in the cities compared to forests. The forest birds sing low and they sing slowly. Great tits living in noisy cities have to compete with the low-frequency songs of heavy traffic, which means their songs go up in pitch to make themselves heard. A bird that sang like Barry White in the forest sounded more like Michael Jackson in the city. The advent of these animals has also drawn a predator as peregrine falcons have also been known to nest in urban areas, nesting on tall buildings and predating pigeons. The peregrine falcon is becoming more nocturnal in urban environments, using urban lighting to spot its prey.

Wildlife assessment of proposed site for Port Harcourt monorail project phase 1-2 was conducted. The reconnaissance survey was conducted on the 20th October, 2010, while formal assessment started in the morning of 21st October 2010 and ended on the evening of 25th October, 2010 with exception of 23rd October, when night survey was conducted. Field activities during the assessment of wildlife commenced 7.30am and ended about 6.30pm daily thus covering the active period of most diurnal wildlife. The sampling locations were selected during familiarization tour based on the presence of significant vegetation cover along the proposed monorail route. These locations are station road, old railway, Nipost bus stop, Isaac Boro park, Ntanwoba creek, Waterlines junction, Olu Obasanjo street, Diobu and Rivers State University of Science and Technology. A transect of 200m length was run at the station road, along old Odua road and another transect of about 250m extending to Nigerian Postal Agency bus stop was run across the former old Railway in Port Harcourt. Assessment of wildlife presence-nests, tracts, signs of feeding were made. Assessors quietly moved around thoroughly searching signs such as footprints, droppings of animal presence at both sides of the route, while listening to characteristics sounds, noise, or calls made by animals.

Similar technique was used at the various sampling locations. The presence of lizards, avian species, tadpoles and signs of rodents was noticed at Station road. However, no nest of birds was found but there was the presence of almond trees which indicated that the abundant bird species were none migratory. Dropping of giant and cane rats and birds were observed along the railway with a dead bird found along the track indicating the presence of predators. During the night survey, predatory activities were confirmed as small live snake was found crawling on the track around 10.02 pm which shows that there must be others not sighted. Presence of snakes were noticed along the railway near the residential quarters opposite the NNPC zonal office and interaction with residents around the area confirmed that two black cobra snakes were observed and killed while swallowing birds in the environment. Foxes have also been disturbing the environment at nights while trying to prey on birds and rodents-Giant rat (Cricetomys gumbranus) has been observed carrying away their palm kernels to feeding sites (*Abere* 2011).

Nigeria is rich in Biodiversity, there are 22,000 vertebrates and invertebrates species that include about 20,000 insects, 1,000 birds, 1,000 fishes, 247 mammals and 123 reptiles. Of these animals, about 0.14 percent is threatened while 0.22 percent is endangered (*MOE* 2001). Nigeria is known as a global hotspot for primate species, with a great diversity found especially in the Gulf of Guinea forests of Cross River state and adjacent parts of Cameroon (ARD 2002). Some important endemic birds and mammals include three monkey species, the white-throated monkey (*Cercopithecus erythrogasier*), scalter's guenon (*Cercopithecus sclateri*) and the Niger Delta red colobus (*procolobus pennantii epieni*) and three birds, the Anambra waxbill (*Estrilda poplipaia*), the Ibadan malimbe (*Malimbus ibadanensis*) and the Jos indigo – bird (*vidua maryae*) (*Aminu-Kano* 2001). Nothing is known to have been documented about urban wildlife species in Rivers State, so there is need to observe and document urban wildlife species in Rivers State for reference and study purposes.Over the years, wildlife study has been neglected (mostly in Rivers State) just because of the fact that most people think that wildlife study can only be done in the forest, a research of this nature will bring to knowledge that wildlife study can not only be done in the forest but it can also be done in the urban areas and that not all species that are found in the urban areas are domesticated. The general objective of this work is to draw up a checklist of wildlife species that are found in the urban areas of Rivers State. The specific objectives include: documentation of all observed

wildlife species that are found in the urban areas of Rivers State. To determine the frequency of occurrence of species of wildlife which dominate the urban areas of Rivers State.

MATERIALS AND METHODS

The presence of urban wildlife fauna in Port Harcourt, Obi/Akpor and Eleme LGAs of Rivers State was recorded between 7am and 6pm, between June and August, 2012. This involved various techniques, both opportunistically and systematically (Boonratana 1993; Burnharm et al; 1980). Considering the dependence of wildlife on vegetation for shelter, food, nesting site etc most sampling stations were established near vegetation. Within each transect and nearby footpaths, wildlife physical presence and evidence of occupation such as foot prints, trails, burrows, fecal droppings, sloughed skin, carcass, food remains, playground, etc were searched for, while walking at a rate of 1km/hr. Stopovers were made at intervals to listen to animal vocalization or calls and high power binoculars (Fujiyama model) were used to screen trees for arboreal forms, like squirrels, snakes, birds, etc. Also, photographic documentation was done using a high resolution digital camera. Each transect was sampled trice every week during the period.

Critical habitats and micro habitats such as logs, litters, forest undergrowth, crevices and burrows were ransacked with the aid of 1m long stick to dislodge any hiding herpetofauna and mammals. To increase the chances of sighting more animals or their evidence of presence, the search was carried out radically along the northern, southern, eastern and western axis of each transect. Rat gums were used and pit fall traps were also established in some transects to trap ground running or crawling animals such as amphibians, snakes, skinks, rats, etc (*Akani*, 2008). Amphibian breeding sites were also sampled using pond nets, while smaller mammals were trapped using rat gums.

All dislodged and sighted animals were identified to possible taxonomic levels, using the exquisite field guides and keys of *Happold* (1987), Kingdon (1997) and *Powell* (1995) for mammals; *Peterson* (1980) and Borrow and Demey (2001) for birds; Branch (1995) for reptiles, *Schiotz* (1963, 1969) and *Rodel* (2000) for amphibians.

RESULT

CHECKLIST OF URBAN WILDLIFE SPECIES ENCOUNTERED

The checklist includes insects (22 species), birds (20 species), mammals (10 species), reptiles (7 species), amphibians (5 species), gastropods (3 species), arachnids (2 species), annelids (2 species), millipedes (2 species) and centipede (1 species). It was observed that the same wildlife species exist in Port Harcourt, Obio/Akpor and Eleme Local Government Areas and insect dominate the urban areas of Rivers State (Table 1).

Table 1: Checklist of Urban Wildlife species encountered

S/N	Scientific Name	Common Name	Family	Class	Place of encounter	PHC L.G.A
•	*Trithemis furva*	Dragonfly	Libellulidae	Insecta	On a floor	+
•	*Danaus plexippus*	Butterfly	Nymphalidae	Insecta	On a field	+
•	*Dorylus molestus*	Sausage ant	Formicidae	Insecta	In an office	+
•	*Toxomerus geminatus*	Hoverfly	Syrphidae	Insecta	In central library	+
•	*Pieris brassicae*	White butterfly	Pieridae	Insecta	On a field	+
•	*Lymantria dispar*	Larva	Lymantridae	Insecta	In a house	+
•	*Periplaneta australasiae*	Cockroach	Blatidae	Insecta	In a house	+
•	*Gryllus pennsylvanicus*	Cricket	Gryllidae	Insecta	In an office	+
•	*Chrysochus cobultinus*	Blue milk weed beetle	Chrysomelidae	Insecta	In a house	+
•	*Cicindela chinensis*	Tiger beetle	Carubidae	Insecta	On a wall	+
•	*Musca domestica*	Housefly	Muscidae	Insecta	On a wall	+
•	*Hypercompe scribonia*	Giant leopard moth	Arctiidae	Insecta	At the bark of a tree	+
•	*Tyria jacobaeae*	Cinnabe moth larva	Arctiidae	Insecta	In a house	+
•	*Glyphodes canthusalis*	Crambid moth	Crambidae	Insecta	On a ceiling	+
•	*Trithemis kirbyi*	Dragonfly	Libellulidae	Insecta	Flying in the	+

				field	
• *Cordulesgaster dorsalis*	Dragonfly	Cordulegastridae	Insecta	Flying in classrooms	+
• *Austroaeschna tasmarica*	Dragonfly	Aeshnidae	Insecta	On a fence	+
• *Aedes species*	Mosquito	Culicidae	Insecta	In the house	+
• *Anapheles quadrimaculatus*	Malaria Mosquito	Culicidae	Insecta	In stagnant water	+
• *Ilyocoris cimicoides*	Creeping water bug	Naucoridae	Insecta	Leaf litter	+
• *Allograpta oblique*	Hoverfly	Syrphidae	Insecta	On a flower	+
• *Crematogaster ashmeadi*	Acrobat ant	Formicidae	Insecta	In a borrow	+
• *Bubulcus ibis*	Cattle egret	Ardeidae	Aves	On a field	+
• *Egretta garzetta*	Little egret	Ardeidae	Aves	on a tree	+
• *Corvus albus*	Pied crow	Corvidae	Aves	On the ground	+
• *Psittacus erithacus*	Grey parrot	Psittacidae	Aves	On a tree	+
• *Streptopelia semitorquatus*	Red-eyed dove	Columbidae	Aves	On the ground	+
• *Centropus senegalensis*	Senegal concal	Cuculidae	Aves	On the ground	+
• *Cypsiurus parvus*	African palm swift	Apopidae	Aves	On a palm tree	+
• *Apus affinis*	Little swift	Apopidae	Aves	On a cable	+
• *Pycnonotus barbatus*	Common bulbul	Pycnonotidae	Aves	On a field	+
• *Ploceus ocularis*	Spectacled weaver	Ploceidae	Aves	On a palm tree	+
• *Ploceus cucullatus*	Village weaver	Ploceidae	Aves	On a palm tree	+
• *Megaceryle maxima*	Giant kingfisher	Alcedinidae	Aves	On a cable	+
• *Halcoyon malinbica*	Blue crested kingfisher	Alcedinidae	Aves	On a cable	+
• *Halcyono senegalensis*	Woodland kingfisher	Alcedinidae	Aves	On a tree	+
• *Ceratogymna fistulator*	Pyring	Bucerotidae	Aves	On a tree	+
• *Tokus fasciatus*	Alliedhornbill	Bucerotidae	Aves	On a tree	+
• *Gypohierus angolensis*	Palm nut vulture	Accipitridae	Aves	On a palm tree	+
• *Milvus migrans*	Black kite	Accipitridae	Aves	On a palm tree	+
• *Columba livia*	Pigeon	Columbidae	Aves	On the ground	+
• *Aegypius monachus*	Vulture	Accipitridae	Aves	On a zinc	+
• *Mus musculus*	House rat	Muridae	Mamalia	Human settlement	+
• *Rattus rattus*	Black rat	Muridae	Mamalia	Human settlement	+
• *Dasymys incomtus*	Shagy rat	Muridae	Mamalia	In the gutter	+
• *Malacomys longipes*	Long-footed swamp rat	Muridae	Mamalia	In the gutter	+
• *Protoxeus strangeri*	Giant forest squirrel	Sciuridae	Mamalia	In a tree	+
• *Cricetomys gambianus*	Gambian rat (rabbit in Nigeria)	Nesomyidae	Mamalia	On the road	+
• *Mus minutoides*	Pygmy mouse	Muridae	Mamalia	Human settlement	+
• *Lemniscomys striatus*	Spotted grass-mouse	Muridae	Mamalia	Around vegetation	+
• *Xerus erythropus*	Geoffroy's ground squirrel	Sciuridae	Mamalia	Around vegetation	+

• *Rattus norvegicus*	Norway rat (brown rat)	Muridae	Mamalia	In a house	+
• *Zaocys fuscus*	Snake	Colubridae	Reptilia	On the road	+
• *Pseudechis gutattus*	Snake	Elapidae	Reptilia	Under a stone	+
• *Gastropyxis smaragdina*	Emerald green snake	Colubridae	Reptilia	On the road	+
• *Trachylepis maculitabris*	Skink lizard	Scincidae	Reptilia	On the ground	+
• *Trachylepis affinis*	Skink lizard	Scincidae	Reptilia	On a fence	+
• *Hemidactylus frenatus*	Wallgecko	Gekkonidae	Reptilia	On a wall	+
• *Agama agama*	Rainbow lizard	Agamidae	Reptilia	On a field	+
• *Amietophrynus maculatus*	Flat blacked-toad	Bufonidae	Amphibia	Under a stone	+
• *Amietophrynus regularis*	Square marked toad	Bufonidae	Amphibia	In a gutter	+
• *Ptychadena mascareniensis*	Frog	Ptychadnidae	Amphibia	In a gutter	+
• *Ptychadena oxyrhynchus*	Frog	Ranidae	Amphibia	In a pond	+
• *Hoplobatrachus occipicalis*	Frog	Ranidae	Amphibia	In a gutter	
• *Archatina marginata*	Snail	Achatinidae	Gastropoda	Leaf litter	+
• *Archatina achatina*	Snail	Achatinidae	Gastropoda	Leaf litter	+
• *Archatina fulica*	Snail	Achatinidae	Gastropoda	Leaf litter	+
• *Salticus scenicus*	Zebra spider	Salticidae	Arachnida	On a wall	+
• *Phidippus clarus*	Jumping spider	Salticidae	Arachnida	On a trunk of tree	+
• *Lumbricus terrestris*	Earthworm	Lumbricidae	Clitellata	On the ground	+
• *Hirudo medicinalis*	Leach	Hirudinidae	Clitellata	On the ground	+
• *Harpar haydenian*	Yellow-spotted millipede	Xystodesmidae	Diplopoda	Leaf litter	+
• *Narceues annularis*	Millipede	Spirobolidae	Diplopoda	Leaf litter	+
• *Narceues scocopendra*	Centipede	scocopendridae	Chilopoda	Under a stone	+

Field Survey, 2012

CLASSES OF WILDLIFE SPECIES ENCOUNTERED

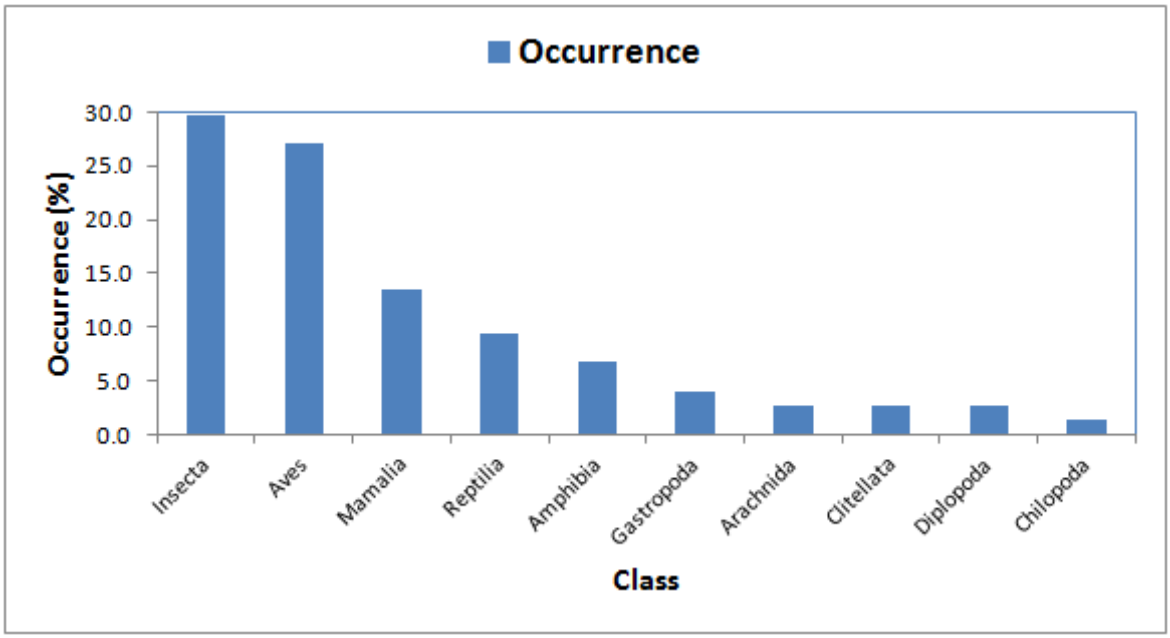
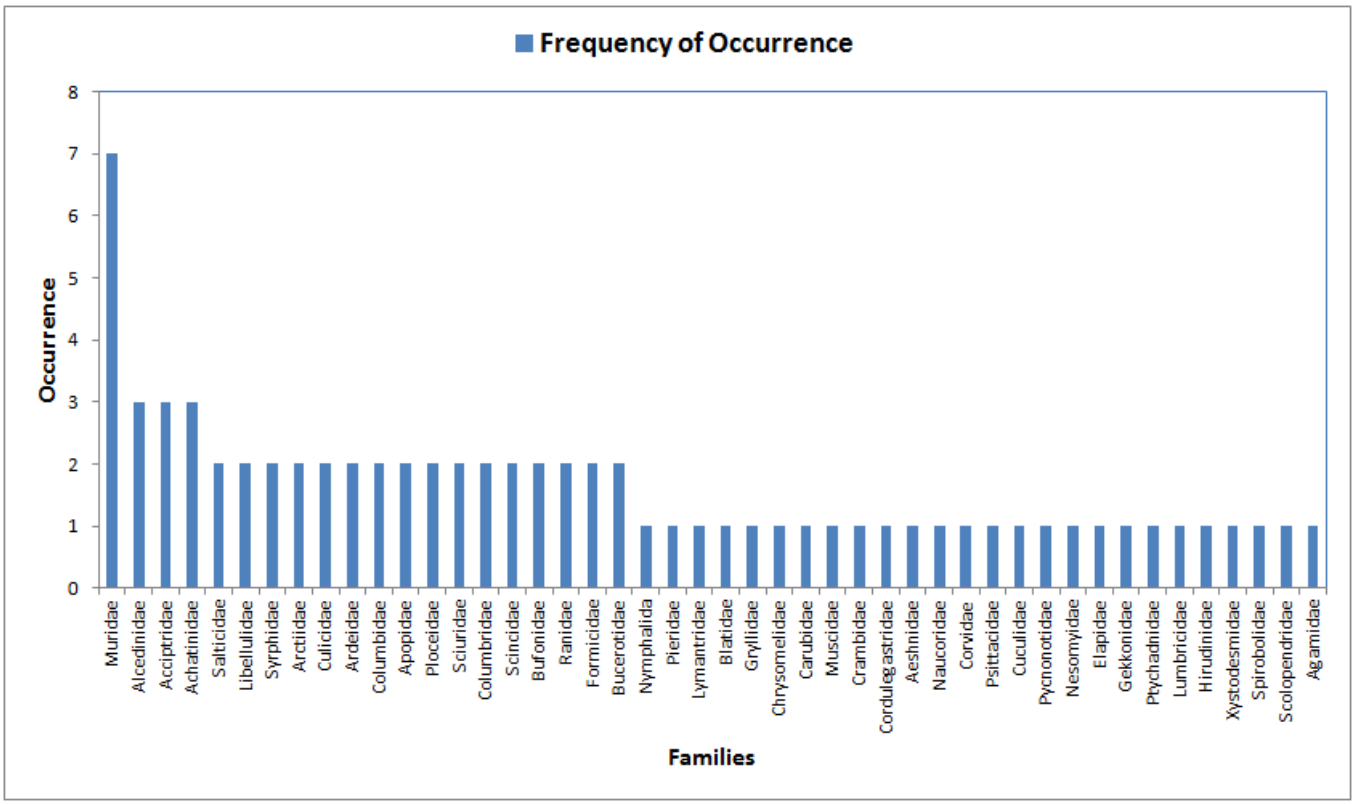


Fig. 1: Classes of Wildlife Species Encountered

The result in figure 1 represents ten classes of wildlife species that occurred in the urban areas of Rivers State.
This includes class insecta,class aves, class mamalia, class reptilia, class amphibia, class gastropoda, class arachnida, class clitellata, class diplopoda and class chilopoda. Class insecta occurred in greater number (29.7%), followed by class aves (27.0%), class mamalia (13.5%), class reptilia (9.5%), class amphibia (6.8%), class gastropoda (4.1%), class arachnida (2.7%), class clitellata (2.7%), class diplopoda (2.7%) and the least is class chilopoda (1.4%).



DISCUSSION

The result shows that despite the urbanization and expansion of cities, some forest patches still harbour some animals such as mammals, birds, reptiles, insects, gastropods, arachnids, amphibians, annelids, centipedes and millipedes. The urban life style has made suitable habitats such as flowers, trees, shrubs, herbs, gutters, ditches, ponds, crevices, logs, forest under growth, borrows etc. for these animals to live. Some wildlife fauna such as spider, wall gecko, rat etc. even live with humans in their homes. The fact that these animals live with humans does not mean that they are domesticated. The fact that the same wildlife species exist in the three local government areas implies that the wildlife species listed are urban wildlife species of Rivers State.

CONCLUSION AND RECOMMENDATIONS

Wildlife species exist in the urban areas such as Eleme, Obio/Akpor and Port Harcourt local government areas of Rivers State. Therefore, the study of wildlife cannot only be done in the forest and rural areas but also in the urban areas. Some wildlife species live with humans even in their homes and the fact that they live with humans does not mean that they are domesticated.

There is need to work on the checklist of urban wildlife species in every state in Nigeria for study and reference purposes.

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