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Full Length Research

Abundance and Diversity of Bird Species of Okomu National Park, Edo State Nigeria

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Abundance and Diversity of avian species were studied in Okomu National park Edo State Nigeria. Thirty transect lines of 1000 m each were randomly placed. Data were collected for twelve months (Dry and Wet seasons). Transects lines were patrolled three times a week and all birds seen and heard were recorded. In all, a total 2,650 individual bird species spread across 164 bird subspecies, 42 families and 15 orders were recorded. The dominant family was Pycnonotidae; it has 17 of the total bird species in the study area. One endangered bird species, African Grey Parrot (*Psittacus erithacus*), was encountered in the study area. The relative abundance of bird species were higher (18.7 and 18.9) dry season was higher than the wet season (18.7and 17.9 of the year). This study showed that the value of Shannon diversity index for bird species was higher in the dry season (4.68) than the farmland (4.636). A total of 104 taxas and 619 individual trees species belonging to 47 families were enumerated. Seventeen (17) tree species were observed to fall into tall emergent layer while, fifty-four (54) tree species were recorded to fall into middle layer strata and thirty three (33) tree species were enumerated to have fall into the understored layer. The habitat specialization result indicates that Seven (7) bird species were encountered in the forest floor some of the bird species while, thirty three (33) bird species were observed to utilize tall emergent layer and Sixty (60) bird species were observed to utilize middle layer trees.

Key Words: Home range, Abundance, Bird species, Diversity, and Habitat Fragmentation.

INTRODUCTION

Many countries in the developing world are experiencing rapid population growth, with associated pressure on natural habitat and their native flora and fauna including avian species (Sodersrom et al., 2003). Habitat loss, destruction and degradation are the major threat to avian species richness and diversity (Birdlife International, 2000). This loss of habitats can be as a result of human or natural causes. Human activities contribute more to habitat destruction. Newton (2004) acknowledged the fact that, in the last 400 years, human actions alone has eliminated about 127 of approximate 9672 species of modern birds. Activities like fire wood collection, logging, agriculture, farming, drainage destruction of wetlands, human settlement, building of infrastructures and industries among others have

altered lots of habitats (Birdlife International, 2000). Agricultural encroachment and unsustainable silvicultural practices have been implicated for these losses (Blockhus et al., 1992). The problem of forest fragmentation is extremely severe in Nigeria due to rapid population growth and land-use changes (Manu et al., 2007).The vegetation of Nigeria is typically described as consisting of forest and savanna, nearly all of the forest vegetation within populated areas in Nigeria has now been largely converted in to savanna through cultivation and burning (Hopkins, 1962). NEST (1991) reported that over 350,000 ha of forest and natural vegetation are being lost annually due to farming.

MATERIALS AND METHOD

Study Area

Okomu National Park is located in Ovia Southwest Local Government Area of Edo State Nigeria, the park became a full-fledged National Park through the provision of Decree 46 of 1999.The park covers a total land area of 181km², which is only about 15% of the total land area that was then Okomu Forest Reserve, which covered a total land area 1200km² The park has four ranges which are; Julius creek range, Iguowan range, Arakwan range and Babui creek range Figure (NCF 2002).

It has central coordinates of 5.267º E and 6.33º N. The Park lies 60km west of Benin –City, the Edo State capital and is immediate, south of Udo town the nearest major settlement of the National Park. The topography of the park is gentle, ranging from 30m to 60m above the sea level; several areas have no notable slope. The area is well drained by the Okomu river and a few of its tributaries. There are many areas where the water table rises above the ground level to form treeless fresh water pools and marshes, some which dry up in the dry season. The park lies in the geological region known as the western coastlands characterized by sedimentary rock of the Eocene Era. Soils are of acidic sandy loams, derived from deep loose deltaic and coastal sediments, sometimes referred to as the “Benin sand”. Rainfall in the area is between 1524 and 1540 per annuum. December and January are the driest months and the wettest months are July and September. The mean annual rainfall temperature is 30ºc. The relative humidity is not below 65%in the driest months and 100% during the wettest months. The soil is acidic nutrient- poor sandy loam. Vegetation is Guinea, Congo lowland rainforest, including area of swamp forest, high forest, secondary forest and open scrubs. Among the common trees are Kapok, *Celtis zenkerii*, *Triplochiton scleroxylon*, *Antiaris Africana*, *Pycnathus angolensis* and *Alstonia congensis*. The park is the best example of mature secondary forest. It serves as habitat for many endangered species of flora and fauna including the forest elephant, *Loxodonta cyclotis* and African Grey Parrot. About 50,000 people in 45 villages live in and around the park. It is continuously threatened by large-scale illegal logging, the expansion of large rubber and oil palm plantations nearby, as well as incursions by a growing human population involved in farming and hunting (Figure 1).

Data Collection

Transects method according to (Bibby et al., 2000) and point Count methods according to (Sutherland et al., 2009) was used to collect data on bird species diversity in all a total of 30 transects each measuring 1000 m were placed randomly and 15 counting stations were set up. Each transect was divided into 200 m sections (Figure 2). Transects were surveyed for birds between 06:30 am and 10:00 am. Data on each site was collected for six months (3 months in the wet seasons and 3 months in the dry season). During transects, all birds seen and heard were recorded along with the 200 m section they occur in. The start time and end time for each section was noted, this was to control the effect of time of day. From the data collected, avian species diversity was calculated using Shannon diversity index, (Usher, 1991) which is given as:

$H^i = - \Sigma Pi \ln Pi$

Where: H^i = diversity index

Pi = is the proportion of the ith species in the sample

InPi = is the natural logarithm of the species proportion.

Species Relative Population Density

The relative population density of bird species at various sites and seasons were determined as outlined by Bibby et al., (1992) as follows:

$$D = \frac{n_1 + n_2}{\pi r^2 m} = \frac{Log_e[n_1 + n_2]}{n_2}$$

where: D = density

r = radius of the first zone

n1 = number of birds counted within zone

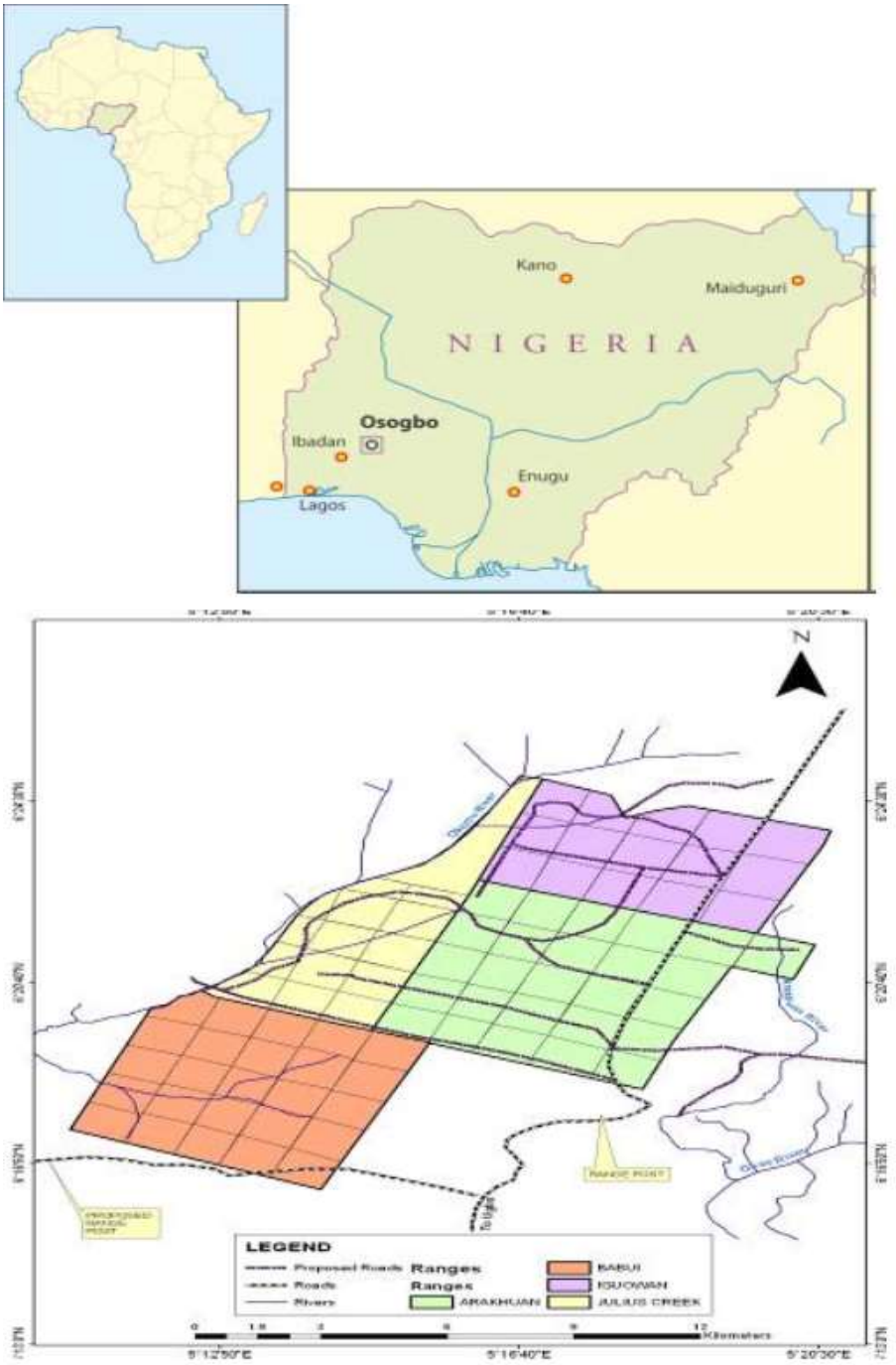

Figure 1. Map of the Study Area. (Source: Ijeomah, 2015).

n2 = number of birds counted beyond zone and m = number of replicate counts in such area.

Habitat Assessment

The ecological survey for the floristic study was conducted in March 2018 (Ogunjemite 2005; Ogunjemite and Oates, 2011). In this study, a total of 20 study plots of about 25 m × 25m Quadrats (500 sq m) size were established. All woody plants with stems rooted independently within a plot and with a dbh (measured at 1.3 m above ground for all lifeforms) equal to or greater than 2.5 cm were measured, inventoried and identified to species level. Multiple

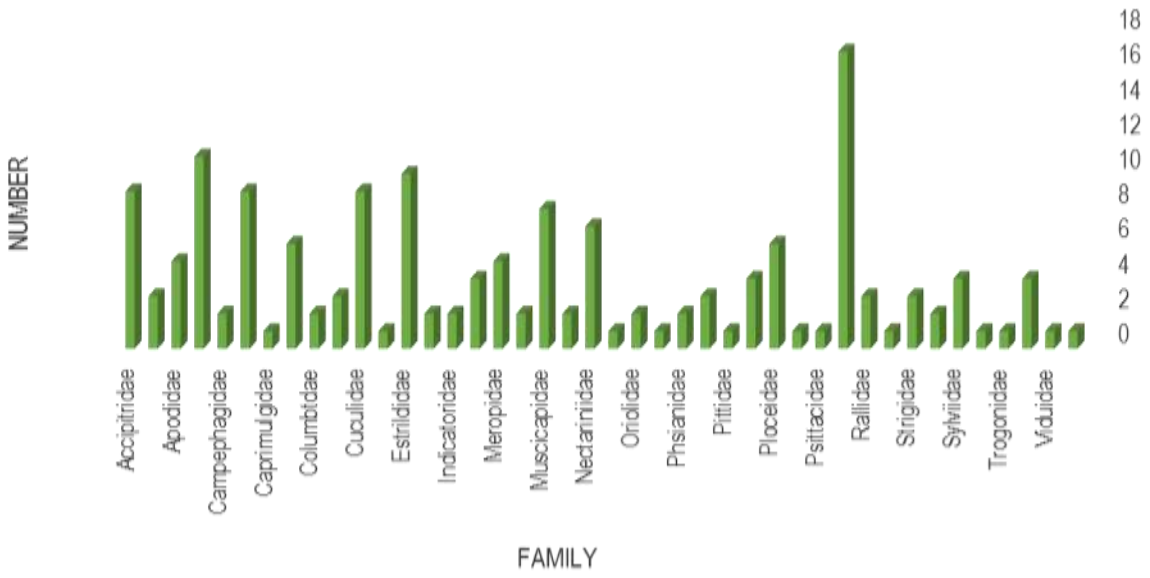

Figure 2. Family Composition of Bird Species in the Study Area.

stems were measured separately, but all stems rooting in the same place were counted as one individual. Specimens were collected in April and May 2018. All specimens were sorted to species level and identified by matching them with vouchers identified by specialists or professional botanists (Ogunjemite et al., 2005). DBH measurement was taken with simple tape measure while height of trees was taken using Haga Altimetre. The conservation value of the habitat types were determined by examining the level of threatened plant within the sampled plots.

Data analysis

Species diversity, floristic composition and similarity were measured with quantitative and qualitative indices. The frequency of a species for each habitat type is defined as the number of 0.0625-ha (25x25m) plots in which it is present, and the sum of all frequencies as the total number of plots per site. Species diversity values were expressed in terms of species, dominance and its relative frequency (Curtis and McIntosh 1951).

Statistical Analysis

Data collected from the observations were explored with descriptive statistics and analyzed with analysis of variance (ANOVA) using the Statistical Package for Social Sciences (SPSS) version 17 (SPSS, 2008).

RESULT

A total 2,650 individual birds spread across one hundred and sixty four (164) bird species belonging to forty two (42) families and fifteen (15) orders were recorded in Okomu National Park. The family *Pycnonotidae* has highest species (17) of the total number of bird species observed in the study area. The families *Campephagidae, Caprimulgidae, Dicruridae, Numidae, Phoeniculidae, PIttidae, Prionopidae, Psittacidae, Recurvirostridae, Timalidae, Trogonidae, Viduidae Zosteropidae* have one species each which is the lowest in the study area The relative population of the bird species in the study area was higher in the dry season (18.7 and 18.9) than the wet season (18.7 and 17.9) (Figure 3). Diversity index of species of birds recorded in the study area between two seasons showed that it was higher in the dry season than 4.636[a] the wet season 4.68[a.] (Table 1). A total of Intra Africa migrant bird species, three Palearctic migrant and one vagrant bird species were observed in the study area Figure 4. A total of 104 taxas and 619 individual trees species belonging to 47 families were enumerated, Myrianthus *aboreus* and *Oxytenanthera abyssinica* have the highest occurrence of 12, while *Allanblackia floribunda* has the lowest occurrence of *Milicia*

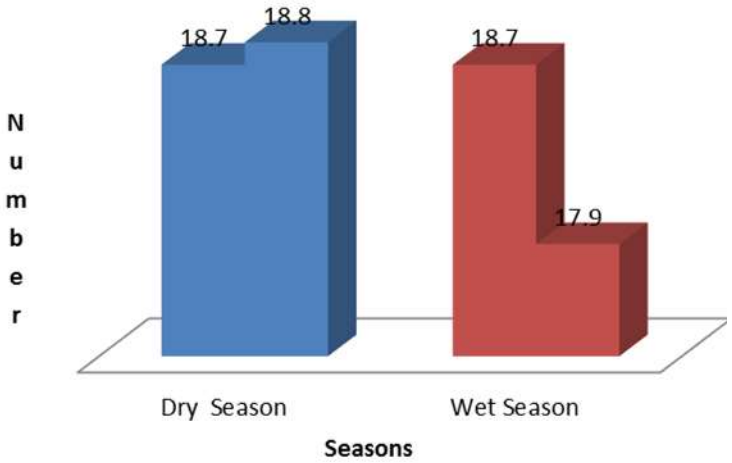

Figure 3. Relative Abundance of Bird Species in the Study Area.

Table 1. Avian Species Diversity Index In Three Study Area.

Diversity index	Dry Season	Wet season
Taxa	150.00[c]	141.00[c]
Individuals	1398	1252
Dominance_D	0.013[a]	014 [a]
Shannon_H	4.68[b]	4.636[c]
Evenness_e^H/S	0.719[a]	0.0401[a]
Equitability	0.934[a]	0.921[b]

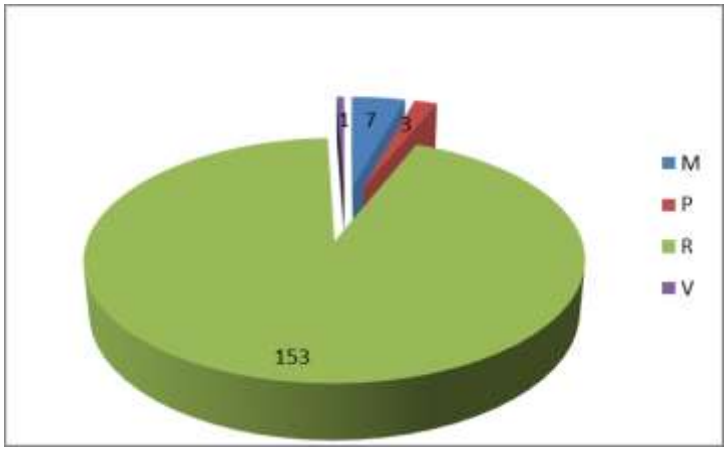

Figure 4. Resident and Migratory Bird Species in the Study Area.

excelsa has the highest mean height of45m, while *Polyceratocarpus parviflorus* and *Xylopia aethiopica* lowest mean height of 7m each. Ficus exasperata has the highest DBH of 582cm; *Strombosia postulate* and *Chrysophalum albidun* have the lowest Dbh of 34cm. Figure 5 revealed that seventeen (17) tree

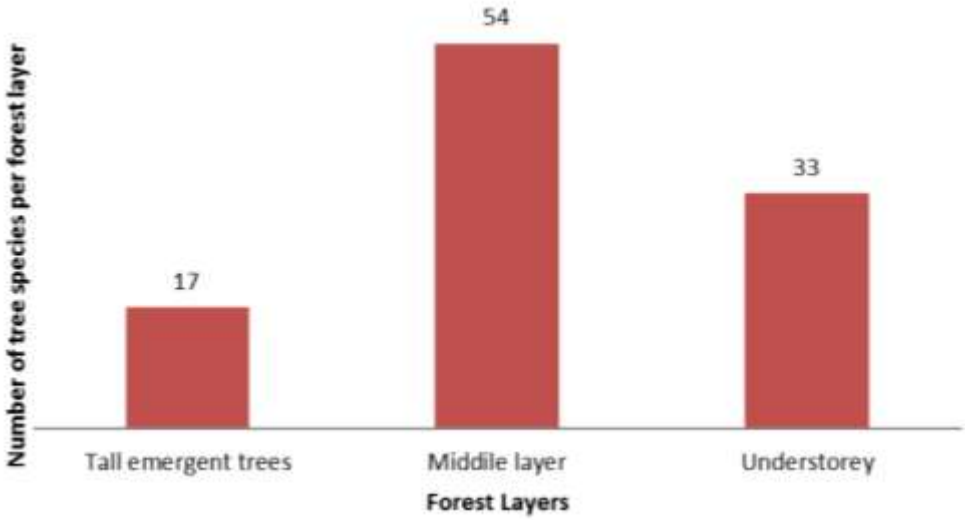

Figure 5. Number of Tree Species in each Strata layer in Okomu National Park.

species were observed to fall into tall emergent layer. Some of the tree species are *Ceiba pentandra, Alstonia congensis, Brachystegia eurycoma, Brachystegia nigerica, Cola gingantean, Daniella ogea, Entandrophragma angolense Entandrophragma utile, Lonchocarpus griffonianus Milicia excelsa Pterocarpus osun* and *Treculia Africana*. These are tree species which their mean height is 22m and above. Fifty four (54) tree species were recorded to fall into middle layer strata. This layer has the highest number of trees in this study area. Some of the tree species in this layer are *Allanblackia floribunda, Anthonotha macrophylla, Bryophyllum pinnantum, Celtis mildibraedii, Chrysophyllum abidun, Diospyros alboflavescens, Ficus exasperata, Lophira alata, Guarea cedrata* and *Irvingia grandifolia*. The tree in this layer are those which their mean height is between 13 to 21m. Thirty three tree species were enumerated to have fall into the understorey layer. Some of the tree species in these layers are *Adenostemma perrotteii, Angylocalyx zenkeri, Amphimas pterocarpoides, Alhornea cordfolia, Bidens pilosa, Carpolobia lutea, Cola lateritia, Monodora tenuifolia* and *Scottellia coriacea*. Trees in this layer are those which their mean is between 8 to 12m. The habitat specialization result indicates that from the result obtained in forest classification Seven (7) bird species were encountered in the forest floor some of the bird species are (White Faced Whistling Duck, Gray Rails, Nkulengu Rail, and Black Winged Stilt, Crested Guinea Fowl and Standard Winged Nightjar), Thirty three (33) bird species were observed to utilize tall emergency trees some of the bird species are (African Fish Eagle, Palm Nut Vulture, Black and White Casqued Hornbill, Yellow Casqued Hornbill, Great Blue Turaco, African Pitta, Grey Parrot and Narnia's Trongo). Sixty (60) bird species were observed to utilize middle layer trees some of the bird species are (African Pied Hornbill, Hairy Barbet, Red Rumped Tinkerbird Western White Cuckoo Shrike, Fire Tailed Alethe and Black Neck Weaver},while sixty four (64) bird species were observed to utilize understory strata in the forest some of the bird species are (Frasser Eagle Owl, Green Combec, Icterine Greenbull, Simple Leaflove, White Spotted Flutail, Little Greenbull, Common Wattle Eye, African Shrike Flycatcher, Collard Sunbird, Splendid Sunbird and Crested Guinea Fowl) Figure 6.

DISCUSSION

The majority of bird species encountered during this study were resident bird species and few migratory bird species. The 98% of the bird species encountered in the study area were forest species which in agreement with (Elgood et al., 1977) who carried out s bird species survey in South Western Nigeria. The study area is located in the low land rain forest which offered even distribution pattern of birds showed highest species richness and Shannon diversity in both seasons of the year which comprises mixed moist deciduous canopy, that could be due to

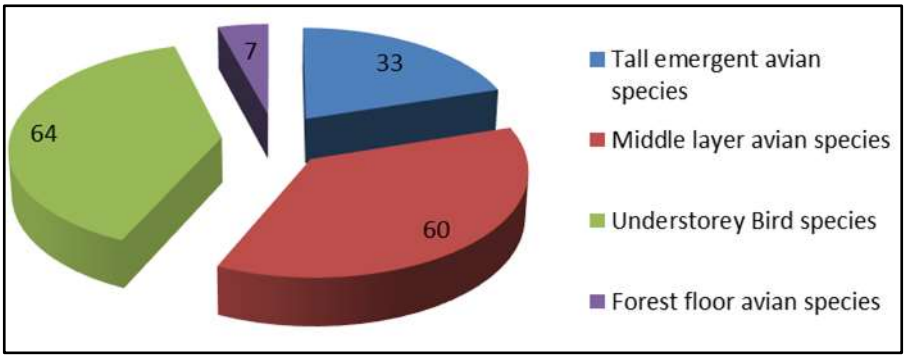

Figure 6. Habitat Specialization of Bird Species in ONP Study Area.

the presence of majority of evergreen trees, which provided the sufficient food in the form of flowers and insects (Thiollay, 1998).

The relative population density of bird species estimates per km_2 was high in the area. This is also consistent with the work of other studies which suggested a high volume availability of preferred food (Faria et al., 2003). Non-crop vegetation in arable fields provides an important source of seeds, but perhaps as importantly, it recruits insects (Cody, 1985). From the result obtained of the relative population of the bird species in the study area size of the area could be responsible, which is in agreement Harvey et al., (2006) who reported that size of an area play a major role in determining the number of bird species per km_2, that the larger the size of particular area the smaller the bird species per km^2 The result showed that 153 bird species utilized the Okomu National Park throughout the period of the research study. This result is consistent with the work of Matlock Jr et al., (2003) who reported that forest patches and protected area in Sao Tome have high retention of bird species than agricultural landscapes. This is also supported previous research studies that suggested multi-strata agroforestry systems are being able to accommodate high levels of species richness and abundance for several tropical groups, especially when compared with alternative land uses devoid of arboreal vegetation (Faria et al., 2006).

The comparison of species diversity between dry and wet season, the result indicates there was significant no difference ($P > 0.05$) in avian species diversity between two seasons. This is consistent with MacArthur and MacArthur (2001) who reported that diversity increases with the number of layers in the vegetation. Pearson (2001) reported that tropical wet evergreen forest support more rare bird species than other habitats. Manu (2007) reported that birds select vegetation variables according to the manner by which an individual habitat affects access to food, mates or its vulnerability to predators.

Few migrant bird species were encountered in the study area, this finding is in agreement with Keith et al., (1992) who reported that most migratory bird species frequent open savanna woodland where the forages are mainly on the ground for insects millipedes, centipedes, spider, snails, earthworms and Birds species are important indicators of environmental quality and ecological functionality. In this study, the author provided data on the response of bird species to certain structural attributes of a natural forest, such as the presence of mature and heterogeneous forest stands (high level of DBH). This study shows that lowland forest in the study areas are best habitats for the birds as far as the numbers and diversity are concerned. This is in agreement with (Pramod et al., 1997) who reported that serious loss of the biodiversity value occurs in the transformation of original landscapes to croplands due to human interference. Karr and Roth, (1971) reported that the more complex the structure or composition of the vegetation, the more likely that habitat will contain more bird species. In this study, tree density, high DBH, trees occurrence and sapling density were important vegetation characteristics responsible for the high bird species richness recorded in Okomu National Park. Bird species behavioral pattern was found to play a big role in bird diversity in the conserved area, for example, (Pied Flycatcher, Black shouldered Puffback, Lagden's Bush Shrike and Blue Shouldered Robin Chat) were more or less resident in the study area throughout the period of this study and forest edges despite the availability of food resources in the surrounding

farmlands (Cody, 1985).

CONCLUSION AND RECONMENDATION

The presence of some endangered and threatened bird species in the study area is a sign of hope. However, their conservation must be guaranteed and that will only be achieved by the conservation of extensive areas of natural vegetation.

Farming intensification around the conserved study area is very high and these areas host high population of rare bird species of ecotourism value such as Black and White Casqued Hornbill, Yellow Casqued Hornbill, Black Casqued Hornbill, Great Blue Turaco, Green Turaco Narinas Trongon, Africa Grey Parrot, Palm Nut Vulture and African Pitta The management of these areas should design programmes to discourage bush burning, deforestation and poaching by the local people.

Leaving out strips of protected areas that link various fields that are swampy in addition to small patches of forest blocks within the oil palm plantation layout is important in Okomu Oil Plantation which share boundary with study area

The conservation strategy must integrate the physical, economic, social and cultural condition of the farmers and Local people so as to come up with innovations and technologies that conserve and sustain biodiversity.

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Appendix 1

Table 2. Checklist of birds in Okomu National Park.

S/N	Family	Scintific Name	Common Name
1	Accipitridae	*Haliaeetus vocifer*	African Fish Eagle
		Polyboroides typus	African Harrier Hawk
		Gypohierax angolensis	African Palm Vulture
		Spizaetus africanus	Cassin's Hawk Eagle
		Accipiter castanilius	Chestnut Flanked Sparrowhawk
		Kaupifalco monogrammicus	Lizard Burzard
		Lophaetus occipitalis	Long Crested Eagle
		Urotriorchis macrourus	Long Tailed Hawk
2	Alcedinidae	*Ispidina lecontei*	African Dwarf Kingfisher
		Halcyon badia	Chocolate Backed Kingfisher
		Alcedo leucogaster	White Bellied Kingfisher
3	Apodidae	*Cypsiurus parvus*	African Palm Swift
		Apus batesi	Bates Swift
		Telacanthura melanopygia	Black Spinetail
		Neafrapus cassini	Cassin's Spinetail
		Rhaphidura sabini	Sabines's Spinetail
4	Bucerotidae	*Ocyceros griseus*	African Dwarf Hornbill
		Tockus nasutus	Africa Grey Hornbill
		Tockus fasciatus	African Pied Hornbill
		Ceratogymna subcylindricus	Black And White Casqued Hornbill
		Ceratogymna atrata	Black Casqued Hornbill
		Tockus hartlaubi	Blck Dwarf Hornbill
		Ceratogymna fistulator	Pipping Hornbill
		Tockus camurus	Red Billd Dwarf Hornbill
		Tockus albocristatus	White Crested Hornbill
		Ceratogymna albotibialis	White Thinghed Hornbill
		Ceratogymna elata	Yellow Casqued Hornbill
5	Campephagidae	*Coracina azurea*	Blue Cuckoo Shrike
		Coracina pectoralis	Western Wattle Cuckoo Strike
6	Capitonidae	*Gymnobucco peli*	Bristle-Nosed Barbet
		Tricholaema hirsute	Hairy Barbet
		Pogoniulus atroflavus	Red Rumped Tinkerbird
		Gymnobucco calvus	Naked Faced Barbet
		Pogoniulus scolopaceus	Speckled Tinkerbird
		Pogoniulus chrysoconus	Yellow Fronted Tinkerbird
		Pogoniulus bilineatus	Yellow Rumped Tinkerbird
		Buccanodon duchaillui	Yellow Spotted Barbet

Table 2. Continue.

		Pogoniulus subsulphureus	Yellow Throated Tinkerbird
7	Caprimulgidae	*Macrodipteryx longipennis*	Standard Winged Nightjar
8	Cisticolidae	*Prinia bairdii*	Banded Prinnia
		Apalis jacksoni	Black Throated Apalis
		Bathmoercus cerviniventis	Black Head Rufous Wabbler
		Cisticola erythrops	Red Faced Cisticola
		Camaroptera chloronota	Olive Green Camaroptera
		Camaroptera superciliaris	Yellow Brown Camaoptera
9	Columbtdae	*Treron calva*	African Green Pigeon
		Turtur brehmeri	Blue Headed Wood Dove
10	Coraciidae	*Coracias cyanogaster*	Blue Bellied Roller
		Eurystomus glaucurus	Broad Billed Roller
		Eurystomus gularis	Blue Throated Roller
11	Cuculidae	*Chrysococcyx cupreus*	African Emerald Cuckoo
		Centropus grillii	Black Coucal
		Cuculus clamosus	Black Cuckoo
		Chrysococcyx caprius	Dideric Cuckoo
		Cercococcyx mechowi	Dusky Long Tailed Cuckoo
		Chrysococcyx klaas	Klaas Cuckoo
		Centropus senegalensis	Senegal Coucal
		Ceuthmochares aereus	Yellowwbill
		Chrysococcyx flavigularis	Yellow Throated Cuckoo
12	Dicruridae	*Dicrurus atripennis*	Shinning Drongo
13	Estrildidae	*Spermestes bicolor*	Black And White Mannikin
		Nigrita bicolor	Chestnut Breasted Negrofinchh
		Nigrita canicapilla	Grey Headed Negrofinch
		Nigrita luteifrons	Pale Fronted Negrofinch
		Lagonosticta senegala	Red Billied Firefinch
		Cryptospiza reichenovii	Red Faced Crimsonwing
		Spermophaga ruficapilla	Red Headed Bluebill
		Spermophaga haematina	Western Bluebill
		Nigrita fusconota	White Breasted Negrofinch
		Parmoptila rubrifrons	Red Fronted Antpecker
		Parmoptila woodhousei	Woodhouse's Red Headed Antpecker
14	Hirundinidae	*Psalidoprocne obscura*	Fanti Saw Wing
		Cecropis semirufa	Rufous Chested Swallow
15	Indicatoridae	*Prodotiscus insignis*	Cassin's Honeyguide
		Indicator minor	Lesser Honeyguide
16	Malaconotidae	*Dryoscopus senegalensis*	Black Shouldered Puffback

Table 2. Continue.

		Malaconotus legdeni	Lagden's Bush Shrike
		Dryoscopus sabini	Large Billed Puffback
		Dryoscopus angolensis	Sabine's Puffback
17	Meropidae	*Merops gularis*	Black Bee Eater
		Merops muelleri	Blue Headed Bee Eater
		Merops pusillus	Little Bee Eater
		Merops bulocki	Red Throated Bee Eater
		Merops albicollis	White Throated Bee Eater
18	Monarchidae	*Erythrocercus mccallii*	Chestnut -Capped Flycatcher
		Elminia nigromittrata	Dusky Blue Flycatcher
19	Muscicapidae	*Fraseria ocreata*	African Forest Flycatcher
		Trochocercus nitens	Blue Headed Crested Flycatcher
		Cossypha cyanocampter	Blue Shouldered Robin Chat
		Stiphrornis erythrothorax	Forest Robin
		Cercotrichas leucosticte	Forest Scrub Robin
		Sheppardia cyornithopsis	Lowland Akalat
		Ficedula hypoleuca	Pied Flycatcher
		Muscicapa infuscate	Sooty Flycatcher
20	Musophagidae	*Corythaeola cristata*	Great Blue Turaco
		Tauraco persa	Green Crested Turaco
21	Nectariniidae	*Chalcomitra adelberti*	Buff Throated Sunbird
		Hedydipna collaris	Collard Sunbird
		Anthreptes rectirostris	Green Sunbird
		Anabathmis reichenbachii	Reichenbach1's Sunbird
		Cinnyris coccinigaster	Splendid Sunbird
		Cinnyris superbus	Supberb Sunbird
		Cinnyris venustus	Variable Sunbird
22	Numididae	*Guttera pucherani*	Crested Guinea Fowl
23	Oriolidae	*Oriolus brachyrhynchus*	Western Black Headed Oriole
		oriolus hosii	Black Winged Oriole
24	Phoeniculidae	*Phoeniculus castaneiceps*	Forest Wood Hoopoe
25	Phsianidae	*Francolinus lathami*	Forest Francolins
		Francolinus bicalcaratus	Double Spurred Francolin
26	Picidae	*Campethera caroli*	Brown -Eared Woodpecker
		Campethera nivosa	Buff Throated Woodpecker
		Dendropicos pyrrhogaster	Fire-Bellied Woodpecker
27	Pittidae	*Pitta angolensis*	African Pitta
28	Platysteiridae	*Platysteira castanea*	Chestnut Wattle eye
		Megabyas flammulatus	African Shrike Flycatcher
		Platysteira cyanea	Common Wattle Eye
		Platysteira concreta	Yellow Bellied Wattle Eye

Table 2. Continue.

29	Ploceidae	*Ploceus melanocephalus*	Black Headed Weaver
		Ploceus nigricollis	Black Neck Weaver
		Malimbus malimbicus	Crested Malimbe
		Malimbus nitens	Gray Malimbe
		Malimbus erythrogaster	Red Headed Malimbe
		Ploceus nigerrimus	Velliot's Weaver
30	Prionopidae	*Prionops caniceps*	Red Billled Helmet-Strike
31	Psittacidae	*Psittacus erithacus*	Grey Parrot
32	Pycnonotidae	*Andropadus ansorgei*	Anssorges Greenbull
		Bleda syndactyla	Common Bristlebill
		Pycnonotus barbatus	Common Bulbul
		Bleda eximius	Green Tailed Bristlebill
		Bleda canicapilla	Grey Headed Bristlebill
		Baeopogon indicator	Honeyguide Greenbull
		Phyllastrephus icterinus	Icterine Greenbull
		Andropadus virens	Little Greenbull
		Andropadus curvirostris	Plain Greenbull
		Pycnonotus cafer	Red Tailed Bulbul
		Chlorocichla simplex	Simple Greenbull
		Chlorocichla simplex	Simple Leave Love
		Nicator chloris	Western Nicator
		Criniger ndussumensis	White Beaded Bulbul
		Nicator vireo	Yellow Spotted Nicator
		Andropadus latirostris	Yellow Whiskered Greenbull
33	Rallidae	*Canirallus oculeus*	Grey Throated Rail
		Himantornis haematopus	Nkulengu Rail
		Sarothrura pulchra	White Spotted Flutail
34	Recurvirostridae	*Himantopus himantopus*	Black Winged Stilt
35	Strigidae	*Strix woodfordii*	African Wood Owl
		Bubo poensis	Frasser's Eagle Owl
		Bubo shelleyi	Shelley's Eagle Owl
36	Sturnidae	*Poeoptera lugubris*	Narrow Tailed Starling
		Lamprotornis purpureiceps	Purple Headed Starling
37	Sylviidae	*Sylvietta virens*	Green Combec
		Hylia prasina	Green Hylia
		Macrosphenus concolor	Grey Longbill
		Eremomela badiceps	Rufous Crowned Eremomela
38	Timaliidae	*Illadopsis cleaver*	Black- Capped Illadopsis
39	Trogonidae	*Apaloderma narina*	Narina's Trogon
40	Turdidae	*Alethe castanea*	Fire Tailed Alethe

Table 2. Continue.

		Zoothera prince	Grey Ground Thrush
		Alethe diademata	White Tailed Alethe
		Neocossyphus poensis	White Tailed Ant Thrush
41	Viduidae	*Vidua macroura*	Pin Tail Whaydah
42	Zosteropidae	*Zosterops senegalensis*	Yellow White Eye