

CONSERVATION PRIORITIES AND ECOTOURISM POTENTIALS OF THE AVIFAUNA OF ITU WETLANDS, NIGERIA



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ABSTRACT

Field studies were carried out monthly from November, 2016 to October, 2017 to ascertain the species list of avians in Itu wetlands. The prospects for conservation priority attention and potentials to attract and sustain local and international ecotourism were assessed. A total of 84 bird species belonging to 33 families were recorded. Two families, Accipitridae and Ardeidae had 8 species each, while 13 families had one species each. Birds recorded included species listed as endangered in the Endangered Species Act 11 of 1985 and many other species requiring special attention because of their critical habitat requirements (many waterfowls). Both local (e.g. Gallinules, Carmine bee-eaters) and palaeartic (e.g. European Barn swallow, *Hirundo rustica*) migrants utilized the wetland as a migratory destination. In view of the important and rich avifaunal assemblage, designating the site as a protected area will further complement efforts to protect other endangered species in the wetland such as the West African manatee, *Trichechus senegalensis*. Together with the scenic beauty of the undulating hills and colonial era relics, it has the potential to become a favourite site for birdwatching ecotourism, biodiversity and natural heritage conservation.

INTRODUCTION

Wetlands are the most productive and biologically diverse ecosystem in the world. Unfortunately, they are also the most fragile and easily destroyed. Human settlements, building of infrastructures, agricultural encroachment, drainage and infilling have resulted in wetland habitat loss and fragmentation (Egwali, 2007; Joshi, 2012). The Itu wetland, consisting of the main Cross River and Eniong River channels, their floodplains and associated backswamp forest at Itu has been described by Udosen (2015). It harbours an array of fauna and flora of national and international conservation importance. Key among these are the bird fauna (Obot *et al.*, 2003). However, due to its lack of legal protection, there is unsustainable pressure on the ecological resources of the area. This has led to a progressive loss of the biodiversity richness and uniqueness of the ecosystem. Sustained studies directed at compiling check-list of species of birds in Itu wetlands will reveal the diversity and conservation measures required to protect the birds and their habitats. Birds have high touristic potentials and the maintenance of a protected area in the Itu wetlands will impact positively on the socio-economy of the Akwa-Cross region. Currently, the Akwa Ibom State Ministry of Culture and Tourism has been making efforts to identify and compile natural and heritage sites' destination for tourism development. The location, physical attribute and faunal assemblage (especially avians and the endangered West African manatee) stand out Itu wetland as a unique place for ecotourism, especially for the amateur and professional bird enthusiasts. This study is aimed at making a provisional species check-list of avians within the wetlands, their conservation status as well as to identify possible challenges to sustainable ecotourism in the area.

MATERIALS AND METHODS

Study Area

The Itu wetlands fall within the middle segment of the Cross River System on the Nigerian side of its course with Odukpani Local Government Area (LGA) of Cross River State to the East and Northwest and in Akwa Ibom State, with Itu Local Government Area to the South and Ibiono Ibom Local Government Area to the West and Northwest respectively. Eniong Creek segment of the wetland where this study was conducted lies between latitudes $05^{\circ}13'14''$ and $05^{\circ}19'19''N$, and between longitudes $007^{\circ}56'14''$ and $007^{\circ}56'59''E$ (Figure 1).

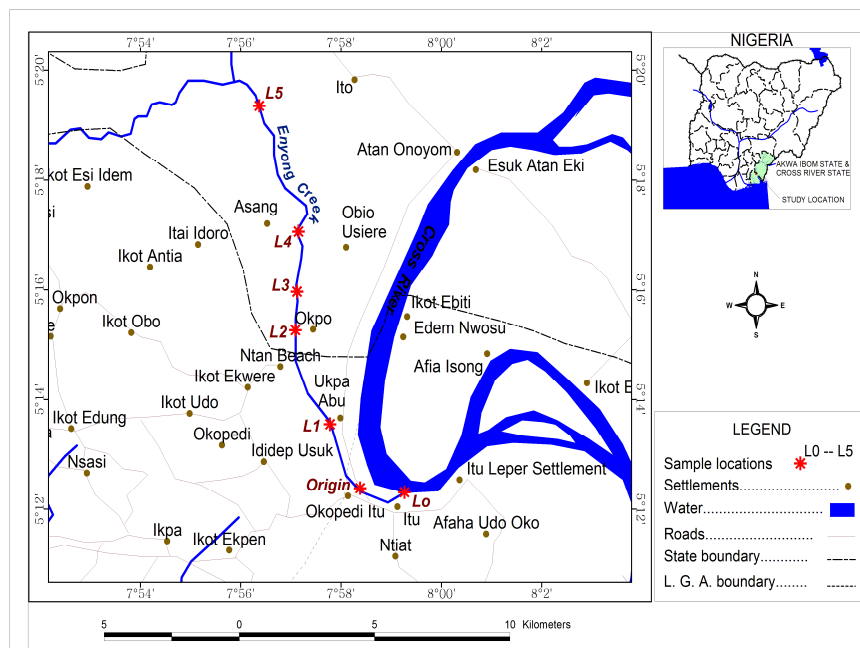


Figure 1: Location of study area along Eniong River

The site is within the rolling hill topography characteristics of the Itu area with gullies and depressions and attendant erosion menace. The climatic condition is that of a typical tropical climate with a prolonged rainy season which begins in April and lasts till early November, and a brief dry season which starts from November, and ends in March. Annual rainfall may range from 3000mm to 5000mm. Relative humidity is high, varying between 20% and 90% in the dry and rainy seasons respectively. Temperatures range between 20 - 28°C. The Eniong River here has broad valleys with extensive forested back-swamps dominated by raphia palms (*Raphia hookeri*), ferns (e.g. *Diplazium* sp., *Dryopteris* sp., *Selaginella* sp.), and hardwood tree species (*Lophira alata*, *Pycnanthus angolensis*). The water channel is adorned with a luxuriant growth of floating and submerged vegetation such as *Echinochloa* spp. *Panicum* spp. *Ipomoea aquatic*, *Cyperus zollingeri* and *Vossia cuspidata*.

Data Collection

Field surveys were conducted monthly from November, 2016 to October 2017 in order to cover the two major seasons in the area. Sighting and identification of birds on foot and with boat were conducted in the morning (7.00a.m. – 12.00noon) and afternoon to evening (3.00pm – 6.00pm) subject to local weather conditions. Visual observations were made with the aid of a pair of binoculars (Nikon Action 10 x 50) and photographs taken with a Nikon D3200 camera with Tamron 18 – zoom lens. Birds were identified using field guides (Serle et al., 1984; Borrow and Demey, 2008). Species not visually sighted were also identified by their call.

The local abundance status (that is the level of abundance of bird species within the study area) was designated as follows: (i) common – where species was found as a flock or group of up to 20 individuals in one survey or encountered frequently in all surveys; (ii) fairly common – where species was encountered in almost all surveys or up to 10 individuals seen in one survey; (iii) Rare – where species was sighted at least once in all surveys. Bird list obtained were cross-checked with the endangered Species Act 11 of 1985 of the Federal Republic of Nigeria and the International Union for Conservation of Nature and Natural Resources (IUCN) Red list of threatened species version 2017-3 (www.iucnredlist.org) to ascertain their conservation status.

RESULTS AND DISCUSSION

Diversity of Birds

In the present study, 84 avian species belonging to 33 families were recorded (Table 1). The families Accipitridae and Ardeidae had 8 species each. Alcedinidae and Ploceidae had 6 species each while families Rallidae and Estrildidae had 4 species each. Seven families had 3 species each, seven families had 2 while thirteen families had one species each. Of the species recorded, the common vulture, *Neophron monachus* is the only species listed as Critically Endangered in the IUCN Red list of threatened species. It was sighted on rare occasions in the area indicating its declining population status.



Figure 2: Vulturine fish-eagle, *Gypohierax angolensis*



Figure 3: White-faced whistling ducks, *Dendrocygnus viduata* at Itu wetland

Of the remaining birds, members of the families Ardeidae, Accipitridae and Falconidae have been listed in Schedules 1 and 2 of the Endangered Species Act 11 of 1985 as shown in Table 1. Figure 2 shows the protected vulturine fish-eagle being offered for sale at Itu. This notwithstanding, there are many other species such as the white-faced whistling duck, *Dendrocygnus viduata* (Fig. 3) whose survival depends on such critical habitats. As reported by Obot et al. (2003), the wetland is also home to overwintering European barn swallows (*Hirundo rustica*). Nigeria is a contracting party to the convention on wetlands (Ramsar, Iran, 1971) and on the Conservation of Migratory Species of Wild Animals (CMS). Consequently, there is an urgent need to protect the Itu Wetlands as migratory destination. There is also an assemblage of local resident waterfowls such as flocks of wild ducks, cormorants, swamp hens, herons and egrets (Figs. 4 - 7).

From the results obtained, twenty seven species were common, 44 fairly common, while 13 were rare in the study location. Forty-four species were widespread (WS) and observed in diverse habitats, 21 species in farm-bush fallow and backwater swamp (FF and BF) forest formations while four and three species were only found in the floodplain (FP) and backwater swamp forest respectively (Table 1). While the birds are not necessarily restricted to the cited habitats at all times, they are nonetheless more likely to be sighted in those habitats by visitors and ornithologists. The residency and distribution of the commonly occurring species indicate that visitors are assured of birds for viewing at all seasons of the year. While during the wet seasons,

the water channel remains the easily accessible channel for movement, there is the option of bank and forest trail walks during the dry season.



Figure 4: A fishing cormorant, *Phalacrocorax*



Figure 5: Swampphens, *Porphyris* sp (juveniles)



Figure 6: Great white egret, *Egretta alba*



Figure 7: African Jacana, *Actophilornis africana*

As a result of its significant ecological functions as an annual migratory destination for thousands of European barn swallows (*H. rustica*), the Nigerian Conservation Foundation (NCF) has designated the wetland as the Itu Swallow Roost and is among the six proposed protected areas (PAs) in Akwa Ibom State (IUCN – NDP, 2018). Priority action is therefore required to realize this protected status. Together with the presence and touristic value of the West African manatee, *Trichechus senegalensis* (Ijeomah et al., 2018), it offers great opportunities for bird viewing and ecotourism. Countries such as Senegal, Gambia and Cameroon that have developed and promoted their avian resources are popular destinations for ‘ornitholiday’ from Europe, America and elsewhere (Barker, 1996). In order for Nigeria to boost its share of the tourist market, facilities such as Itu wetlands must be developed. Unfortunately, due to lack of legal protection, current anthropogenic threats facing animals in the wetland included unregulated hunting, habitat loss, pollution and unsustainable agriculture.

Table 1: Checklist of Avian Fauna Occurring Within the Itu Wetland Area

Family/species	Common name	Index of abundance	Associated habitats
Phalacrocoracidae			
<i>Phalacrocorax africanus</i>	Long-tailed cormorant	***	OC, FP
Ardeidae ⁺⁺			
<i>Ardeola ralloides</i>	Squacco heron	**	FP, FF
<i>Bubulcus ibis</i>	Cattle egret	***	WS
<i>Butorides striatus</i>	Green-backed heron	**	FP, FF
<i>Nycticorax nycticorax</i>	Black-crowned night heron	**	BF
<i>Egretta alba</i>	Great white egret	**	WS
<i>E. garzetta</i>	Little white egret	***	WS
<i>Ardea cinerea</i>	Grey heron	*	WS
<i>A. purpurea</i>	Purple heron	*	WS
Anatidae			
<i>Dendrocygnus viduata</i>	White-faced whistling duck	***	WS
<i>D. bicolor</i>	Fulvous whistling duck	**	WS
Accipitridae ⁺			
<i>Accipiter badius</i>	Shikra	**	FF BF
<i>Neophron monachus</i>	Hooded vulture	*	FF
<i>Polyboroides radiatus</i>	African harrier hawk	**	WS
<i>Kaupifalco monogrammicus</i>	Lizard buzzard	**	BF, FF
<i>Haliaetus vocifer</i>	West African river eagle	*	WS
<i>Elanus caeruleus</i>	Black-shouldered kite	**	FR, FF
<i>Milvus migrans</i>	Black kite	***	WS
<i>Gypohierax angolensis</i>	Vulturine fish eagle	**	WS
Falconidae ⁺			
<i>Falco ardosiaceus</i>	Grey kestrel	**	WS
<i>F. tinnunculus</i>	Common Kestrel	*	FF, BF
Phasianidae			
<i>Francolinus bicalcaratus</i>	Double-spurred francolin	**	WS
<i>Numida meleagris</i>	Guinea fowl	**	FF, BF
Rallidae			
<i>Sarothrura pulchra</i>	White-spotted flufftail	**	BF, FP
<i>Amauornis flavirostra</i>	Black-crake	***	WS
<i>Gallinula chloropus</i>	African moorhen	***	WS
<i>Porphyris alleni</i>	Allen's gallinule	***	WS
Jacanidae			
<i>Actophilornis africana</i>	Lily-trotter	***	WS
Burhinidae			
<i>Burhinus senegalensis</i>	Sengal thick knee	*	FP
Scolopacidae			
<i>Calidris spp.</i>	Sandpiper	**	FP
Columbidae			
<i>Streptopelia semitorquatus</i>	Red-eyed dove	**	WS
<i>S. vinacea</i>	Vinaceous dove	*	FF, BF
<i>Turtur tympanistria</i>	Tambourine dove	**	WS
Musophagidae			
<i>Tauraco persa</i>	Green-crested touraco	**	FF, BF
Cuculidae			
<i>Chrysococcyx klass</i>	Klaas's cuckoo	**	FF, BF
<i>C. caprius</i>	Didric cuckoo	**	WS
<i>Centropus senegalensis</i>	Senegal coucal	***	WS
Tytonidae			
<i>Tyto alba</i>	Barn owl	*	FF, BF

Family/species	Common name	Index of abundance	Associated habitats
Caprimulgidae			
<i>Caprimulgus natalensis</i>	Swamp nightjar	**	BF, FF
<i>Macropodipteryx longipennis</i>	Standard-wing night jar	*	BF, FF
Apodidae			
<i>Telecanthura ussheri</i>	Ussher's spine-tailed swift	***	WS
<i>Cypsiurus parvus</i>	Palm swift	**	FF, BF
<i>Apus affinis</i>	Little African swift	**	WS
Alcedinidae			
<i>Ceryle maxima</i>	Giant kingfisher	*	OC, BF
<i>C. rudis</i>	Pied kingfisher	***	OC, BF
<i>Alcedo cristata</i>	Malachite kingfisher	**	WS
<i>Ceyx picta</i>	Pygmy kingfisher	**	BF, FF
<i>Halcyon senegalensis</i>	Senegal kingfisher	***	WS
<i>H. leucocephala</i>	Grey-headed kingfisher	**	BF, FF
Meropidae			
<i>Merops nubicus</i>	Carmine bee-eater	**	BF, FF
<i>M. albicollis</i>	White-throated bee-eater	**	WS
<i>M. pusillus</i>	Little bee-eater	***	WS
Coraciidae			
<i>Eurystomus glaucurus</i>	Broad-billed roller	**	BF, FF
Bucerotidae			
<i>Tockus fasciatus</i>	African pied-hornbill	***	WS
<i>Bycanistes fistulator</i>	Piping hornbill	***	WS
Capitonidae			
<i>Pogoniulus subsulphureus</i>	Yellow-throated tinker bird	*	BF, FF
Picidae			
<i>Dendropicus gabonensis</i>	Gabon woodpecker	*	BF
Hirundinidae			
<i>Riparia riparia</i>	Common sand martin	**	FP
<i>Hirundo nigrita</i>	White-throated blue swallow	**	WS
<i>H. rustica</i>	European barn swallow	***	WS
Motacillidae			
<i>Motacilla flava</i>	Yellow wagtail	***	FP, FF
<i>M. aguimp</i>	African pied-wagtail	*	FP
<i>Macronyx croceus</i>	Yellow-throated long-claw	***	WS
Laniidae			
<i>Lanius collaris</i>	Fiscal shrike	**	FF, FP
Corvidae			
<i>Corvus albus</i>	Pied crow	***	WS
Pycnonotidae			
<i>Pycnonotus barbatus</i>	Common garden bulbul	***	WS
<i>Thescelocichla leucopleura</i>	Swamp palm bulbul	**	BF, FF
<i>Andropadus virens</i>	Little greenbul	**	BF
Turdidae			
<i>Turdus pelios</i>	W. African thrush	**	WS
Sylviidae			
<i>Sylvia borin</i>	Garden warbler	**	FF, BF
<i>Cisticola galactotes</i>	Winding cisticola	***	WS
Nectarinidae			
<i>Nectarinia olivacea</i>	Olive-bellied sunbird	**	WS
<i>N. cuprea</i>	Copper sunbird	**	WS
Fringillidae			
<i>Serinus mozambicus</i>	Yellow-fronted canary	**	FF, BF

Family/species	Common name	Index of abundance	Associated habitats
Ploceidae			
<i>Ploceus cucullatus</i>	Village weaver	***	WS
<i>P. nigerrimus</i>	Veillot's black weaver	**	WS
<i>Malimbus rubricollis</i>	Red-headed malimbe	**	BF, FF
<i>M. scutatus</i>	Red-vented malimbe	**	BF, FF
<i>Passer griseus</i>	Grey-headed sparrow	**	WS
<i>Vidua macroura</i>	Pin-tailed whydah	**	WS
Estrildidae			
	Cut-throat finch	**	FP, FF
<i>Amadina fasciata</i>	Orange-cheeked waxbill	***	WS
<i>Estrilda melpoda</i>	Blue-billed mannikin	***	WS
<i>Lonchura bicolor</i>	Bronze mannikin	***	WS
<i>Spermestes cucullatus</i>			

+ - Birds in schedule 1 of endangered species Act 11 of 1985

++ - Birds in schedule 2 of Act 11 of 1985

*- Rare ** - Fairly common *** - Common

FF- Farm-bush allow formation BF- Backswamp forest FP- Grass dominated flood plain

OC - Open water channel WS - Widespread in diverse habitats

Ecotourism potentials

In order to maximize the potential benefits offered by the protection of the biological resources discussed above, it should be combined with the identification and promotion of the natural beauty of the landscape as well as heritage sites in the area. The remnants of colonial era trading posts and companies along the beaches, the Mary Slessor heritage sites at Use Ikot Oku, Ibiono and Hospital at Obot Itu should be prevented from further dilapidation. As observed by Egwali (2007), there are many emergent beaches with golden-brown sands that become prominent during the dry season that could be utilized for beach games and aquatic sports.

From observations made during the study, the host communities are favourably disposed to having the wetlands resources exploited in a sustainable manner which a protected area will confer on it. They are fully aware of the benefits of the ancillary services and multiplier effects they will generate from visitors. This is in line with the expectations of Akpabio *et al.* (2008) that modern tourism should be geared towards minimizing and possible eradication of poverty through an interlinkage of the economy and environment.

CONCLUSION AND DRECOMMENDATION

There is thus the need for the relevant Ministries of Culture and Tourism; Environment and Natural Resources to liaise with higher institutions and knowledgeable NGOs within the State to map out a blue print to officially gazette and conserve the rich natural resources of Itu wetlands. A lot of logistic support could also be obtained from the A. P. Leventis Ornithological Research Institute (APLORI), Jos, in partnering with their Nigeria Bird Atlas Project. Bird Clubs at all levels should be encouraged in the State to raise awareness and stoke-up bird watching enthusiasm. This will allow for informed and a sustainable exploitation, while enabling the wetland to carry out its life-support functions as well as perpetuating representative species of this ecozone.

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