



African Bird Club

Working for birds and conservation in Africa



Action pour la Conservation de
la Biodiversité en Côte d'Ivoire

PROJECT 2023 CA11

**THEME: PRELIMINARY INVENTORY OF
THE AVIFAUNA OF THE CLASSIFIED
FOREST OF MOUNT KORHOGO, COTE
D'IVOIRE**

REPORT

Project implementation



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Executive Summary

The classified forest of Mount Korhogo (FCMK) is located on the northwestern outskirts of the city of Korhogo. It is a peri-urban forest with protected status and managed by the forest development company (SODEFOR). This forest represents, apart from the sacred forests of modest size, the only wooded site in the immediate surroundings of the city. It is therefore of capital importance for biodiversity and also for local populations. As a result, the FCMK is strongly impacted by human activities that threaten its biodiversity and the ecosystem services it can provide.

Unfortunately, the wildlife biodiversity of this forest is not known, due to a virtual absence of studies on all the fauna of this site. It is to fill this gap that this study was carried out in order to determine the avian fauna of the FCMK and assess the potential threats of anthropogenic origins observed on the site. Indeed, birds being good indicators of the health of ecosystems, they can help assess the conservation status of the FCMK.

This study took place from October 2023 to September 2024, with the financial support of the African Bird Club (ABC) and the administrative support of the NGO Action pour la Conservation de la Biodiversité en Côte d'Ivoire (ABC-Côte d'Ivoire). The inventories carried out revealed that the FCMK is rich in 138 species of birds, mainly species from open environments and a small percentage of forest species. This specific richness is divided into 50 families and 17 orders.

These results show that the FCMK is heavily disturbed by human activities. The threats identified are the transhumance of livestock within the FCMK with the action of trampling the vegetation; intensive felling of woody plants (reforested trees and natural trees), agriculture, illegal dumps, hunting and noise pollution from vehicle traffic.

This study shows that the FCMK is an important area for birds. However, this forest is seriously threatened by human activities. It is therefore essential to implement measures to preserve the biological resources of this forest. This involves intensifying surveillance measures, raising awareness among local populations and implementing a restoration plan for the classified forest.

I. Background and justification

The classified forest of Mount Korhogo (FCMK) is a site that benefits from a protected status. It belongs to the network of 234 classified forests in Côte d'Ivoire. All these classified forests are managed by the forest development company (SODEFOR). This state company is responsible for the maintenance, expansion and development of the forests under its responsibility.

The northern and northeastern part of Côte d'Ivoire does not contain any protected areas (national parks or reserves). However, it does contain several classified forests that include natural formations and plots of land that have sometimes been reforested with exotic commercial species. Thus, the FCMK is located on the western outskirts of the city of Korhogo. This forest is seriously threatened by the expansion of the city of Korhogo, which is experiencing rapid economic and demographic growth. Today, approximately 37% of the initial surface area of the classified forest has been illegally occupied by populations who have built two residential areas there (Gon and Cocody). In addition to this reduction in the surface area of the site, other types of threats are represented by agriculture, extensive livestock farming, uncontrolled bush fires, illegal logging, and certain local cultural activities. Also, for the purposes of building homes, the lowlands of the forest have served as an area for collecting construction materials such as sand.

Despite all these threats, the FCMK is a site of great interest for the populations and for biodiversity. Indeed, on the outskirts of the city of Korhogo, the natural landscapes have been replaced by a tangle of annual or perennial monocultures and fallow land. The classified forest of Mount Korhogo therefore remains, with the few sacred forests, one of the rare forest areas. Therefore, this classified forest represents an important concentration of local biodiversity to which several ecosystem services are undeniably associated.

Despite its potential importance for the city, there is no data on the wildlife of this site of interest. The avifauna of the FCMK is totally unknown. However, faced with the increasing anthropization of the natural environments of this region, this forest could constitute a sanctuary for wild birds. The project will help to inventory for the first time the avifauna of this protected area. This will provide data on an annual cycle relating to the specific richness and the role of the site in the dynamics of the bird populations present. It will also provide data on the threats to which the avifauna is exposed.

All the data that will be collected will help to better guide the management policy and, if necessary, give rise to considerations for more appropriate conservation measures. It will also be possible, based on the pioneering study, to develop several themes in favor of the study and conservation of bird species. Awareness-raising actions can be carried out to obtain the support of the population for the various management and conservation measures in force and to come.

African Bird Club (ABC) is a charity dedicated to the conservation of birds and their habitats across the African continent and associated islands, with the aim of advancing ornithology in this region. To carry out this preliminary study, we applied for and received funding of £2,849 from ABC through the Non-Governmental Organisation Action pour la Conservation de la Biodiversité en Côte d'Ivoire (ACB-Côte d'Ivoire). This is ABC's first financial support in Côte d'Ivoire. The title of the project is Project 2023_CA11 Preliminary inventory of the avifauna of the classified forest of Mount Korhogo, Côte d'Ivoire. The objective of the project is to contribute to a better knowledge and good conservation of the birds of the classified forest of Mount Korhogo, a site of high value for the city of Korhogo. In short, it is about determining, for the first time, the diversity of birds in the classified forest; to assess the threats affecting this site and the birdlife associated with it; to identify species of interest for conservation and to strengthen the capacities of managers of the classified forest on the ecological monitoring of birdlife.

II. Study setting

The project site is the classified forest of Mount Korhogo, located on the western outskirts of the city of Korhogo, itself located in the north of Côte d'Ivoire. The classified forest of Mount Korhogo is a site that benefits from a protected status and in which the usage rights of local communities are preserved. It is located between latitudes 9°48' and 9°16' north and longitudes 5°40' and 6°10' west. Initially 1409 ha, the area of the site increased to 1155 ha following the conversion of a portion of the forest for the extension of the city, by illegal subdivision.

The classified forest of Mount Korhogo (FCMK) is irrigated by two rivers (Lofiné and Nangounaloho). Along these watercourses, forest galleries consisting mainly of *Khaya senegalensis* and *Uapaca somon* are observed.

Far from the rivers, forest formations are encountered with a tree layer, a shrub layer and a herbaceous layer. The tree layer (open forest) is made up of *Isoberlinia doka* and *Daniellia oliveri*. The shrub layer is made up of shrubs that are most often stunted such as *Combretum*

glutinosum, Combretum molle, Detarium microcarpum, Diospyros mespiliformis, Parkia biglobosa. The herbaceous layer, more or less continuous, is dominated by Andropogon gayanus and Imperata cylindrica. In the dry season, especially in April, the herbaceous layer is almost non-existent. It is often burnt or very dried out.

Forest plantations based on Tectona grandis, Gmelina arborea, Eucalyptus citriodora, Anacardium occidentale have been introduced in the FCMK. The site also shelters wooded savannahs made up of plant formations where trees and shrubs are scattered above the herbaceous layer which is dominant, with a woody density which varies from 30 to 60%. In the lowlands of the site, non-woody crops are present. These are mainly corn (*Zea mays*), peanuts (*Arachis hypogaea*), rice (*Oryza spp.*), millet (*Pennisetum spp.*), yam (*Dioscorea spp.*), cotton (*Gossypium hirsutum*) and tobacco (*Nicotiana tabacum*). The FCMK is therefore full of a plurality of habitats which can be the source of a high diversity of birds.

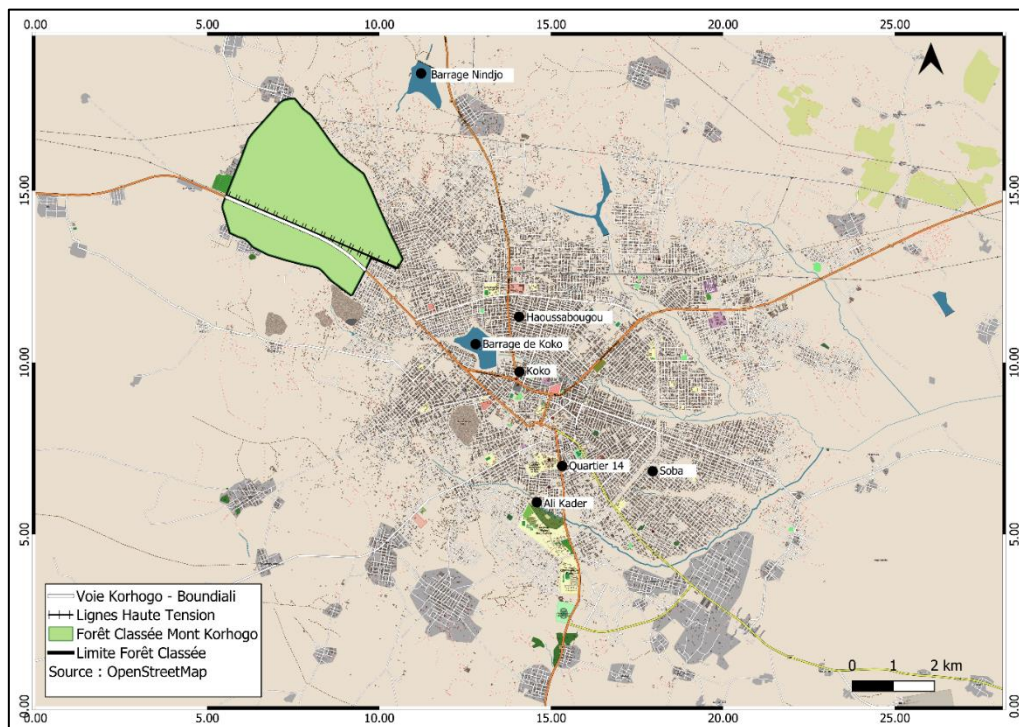


Figure 1 : Geographical location of the Mount Korhogo Classified Forest in the city of Korhogo

III. Material and methods

3.1. Material

As part of this project, much of the equipment was acquired with funding from the African Bird Club. The bulk of the equipment acquired is summarized in Table I.

Table I : Summary of equipment acquisitions and budget utilization

Material	Quantity	Uses
Mist net	20	For the capture and recapture of birds
Rings	2000	To mark captured birds
Carrying bags	100	For the transport of captured birds
Vernier calipers	2	For taking measurements of birds
Digital scales	2	For weighing birds
Machete	1	For clearing brush
Boots	2	For body protection
Raincoats	2	
Batteries	40 (AA)	To power electronic equipment

In addition to this equipment, equipment acquired outside of this funding was used in this study. Thus, a digital camera (Canon EOS 2000D + 300 mm telephoto lens) was used to take pictures. A GPS (GARMIN etrex 10) was used to take measurements of the geographical coordinates of the study environment. A dictaphone (SONY ICD-PX470) was used to record bird vocalizations. A pair of binoculars (BRESSER 10*42) was used for bird observation. An identification guide (Borrow and Demey, 2008), the CD box set of African bird calls and songs (Chappuis, 2000) and the Merlin Bird ID application were used to identify birds.

3.2. Methods

3.2.1. Site survey, choice of habitats

Before the first phase of data collection, surveys were carried out in the classified forest of Mount Korhogo (FCMK) to select the plots to be sampled. This resulted in the selection of four plots with different characteristics. Two of the habitats are plots that share at least one boundary with residential areas. Thus, plot 2 is bordered by the Cocody district and plot 4 is bordered by the Cité Gon district. These two plots are separated from each other by the national road that connects the city of Korhogo to that of Odienné. The third habitat is a forest plot in the center of the FCMK, therefore far from residential areas. It is called plot 1. The fourth habitat is represented by a lowland used as a seasonal crop area (plot 3). These sites were chosen to take into account the different facies of the FCMK. However, the plots are not homogeneous in

terms of botanical compositions. Each of the plots therefore contains a mosaic of vegetation and facies which is the result of the different episodes of degradation and reforestation that the forest massif has experienced (Figure 2).

In general, the natural vegetation is shrubby associated with plantations. Plots 1 (Figure 3) and 2 (Figure 4) have a large proportion of natural vegetation associated with teak and eucalyptus plantations. Plot 3 (Figure 5) is a flood zone made up of meadow, water retention, crops (market gardening and rice) bordered by natural forests and teak-based forests. As for plot 4 (Figure 5), it is composed of natural vegetation, Gmelina plantation, tech and cashew.



Figure 2 : Map of inventory plots within the FCMK

At the end of the survey period, five observation points were placed in each plot. These points were separated from each other by a distance of 300 meters to minimize double counting errors. Each point was sampled for 20 min and all birds seen or heard within an approximate radius of 100 m were noted. Observations took place in the mornings from 06:00 to 10:00, which constitute the period of maximum activity for the vast majority of diurnal birds.

The inventory of birds in the Mount Korhogo Classified Forest took place from October 2023 to September 2024, i.e. for 12 months. All species encountered outside the observation points throughout the FCMK were noted in order to determine the overall species richness. When necessary, the method of revisits made it possible to find a bird in order to observe it better or photograph it.

Following additional surveys, preferential sites for setting Japanese nets were identified in each habitat and two capture trials were carried out to test the nets.

Unfortunately, we have not been able to carry out a capture and recapture campaign to date. This is due to the lack of poles that we are currently having made by local craftsmen. However, given the importance of this methodology in the inventory of birds, especially forest birds, a three-month capture campaign will be carried out from the beginning of the rainy season, that is to say from April to June.



Figure 3 : Some facies of plot 1



Figure 4 : Some facies of plot 2



Figure 5 : Some facies of plot 3



Figure 6 : Some facies of plot 4

During the inventories, evidence of disturbance or anthropization of the environment was collected. These are signs of felling (stump, felled trunk, felling noise); garbage dump sites, hunting signs (shell casings, gunshots), signs of cults (traces of sacrifices). These signs were georeferenced and used as a basis for maps.

3.2.2. Project Stakeholders

Stakeholder consultations on the preliminary inventory project for the avifauna of the classified forest of Mount Korhogo began in September 2023. Indeed, letters of information and requests for working sessions were submitted, from September 13 to 15, 2023, to the secretariats of the various partner structures. These are the Regional Directorate of Water and Forests (DREF), the Regional Directorate of the Environment and Sustainable Development (DREDD) and the SODEFOR management center of Korhogo (CGK). Of the three structures concerned, only the DREDD responded favorably to our request for a working session, despite multiple reminders.

The working session with the members of the DREDD took place on October 3, 2023 within the said directorate in the presence of the people appearing on the attendance list in appendix 1. During this working session, the project and its objectives were clearly presented by the project coordinator (Figure 7).



Figure 7 : Family photo after the working session at the Regional Directorate for the Environment and Sustainable Development.

IV. Results

After 12 months of monitoring the bird fauna of the classified forest of Mount Korhogo, we were able to identify a total of 138 species of birds belonging to 50 families and 17 orders of birds. In total, 1436 individuals were counted taking into account the IPA on all the sampled plots.

Table II : List of birds observed in the classified forest of Mount Korhogo from October 2023 to September 2024

R: Resident; M: Intra-African migrant; P: Palearctic migrant; f: Open habitats; E: Wetlands; F: Forest; A04: Sudano-Guinean savannah biome; A05: Guinean-Congolese forest biome; LC: Least concern; Biogeo: Biogeographic origin; Habitat: Preferred habitat; IUCN: IUCN threat category; PAI: Point Abundance Index.

Order / Family / Specie	French name	Biogeo	Habitat	Biome	IUCN	PAI
Galliformes						
Odontophoridae						
<i>Ptilopachus petrosus</i> (J. F. Gmelin, 1789)	Stone Partridge	R	f.		LC	12
Phasianidae						
<i>Pternistis bicalcaratus</i> (Linné, 1766)	Double-spurred Francolin	R	f.		LC	1
Anseriformes						
Anatidae						
<i>Dendrocygna viduata</i> (Linné, 1766)	White-faced Duck	R/M	E		LC	16
<i>Plectropterus gambensis</i> (Linné, 1766)	Spur-winged Goose	R	E		LC	4
Columbiformes						
Columbidae						
<i>Columba guinea</i> Linné, 1758	Speckled Pigeon	R	f.		LC	17
<i>Streptopelia semitorquata</i> (Ruppell, 1837)	Red-eyed Dove	R	f.		LC	29
<i>Streptopelia vinacea</i> (Gmelin, 1789)	Vinaceous Dove	R	f.		LC	91
<i>Spilopelia senegalensis</i> (Linné, 1766)	Laughing Dove	R	f.		LC	21
<i>Turtur abyssinicus</i> (Sharpe, 1902)	Black-billed Wood Dove	R	f.		LC	31
<i>Turtur afer</i> (Linné, 1766)	Blue-spotted Wood Dove	R	f.		LC	2
<i>Turtur tympanistria</i> (Temminck, 1809)	Tambourine Dove	R	F		LC	5
<i>Treron calvus</i> (Temminck, 1808)	African Green-pigeon	R	F		LC	13
Apodiformes						
Apodidae						
<i>Cypsiurus parvus</i> (Lichtenstein, 1823)	African Palm-Swift	R	f.		LC	2

<i>Apus apus</i> (Linné, 1758)	European Swift	P	f.	LC	37
Cuculiformes					
Cuculidae					
<i>Centropus senegalensis</i> (Linné, 1766)	Senegal Coucal	R	f.	LC	3
<i>Clamator levaillantii</i> (Swainson, 1829)	Levaillant's Cuckoo	M	f.	LC	2
<i>Clamator glandarius</i> (Linné, 1758)	Great Spotted Cuckoo	M/R	f.	LC	2
<i>Chrysococcyx klaas</i> (Stephens, 1815)	Klaas's Cuckoo	R	f.	LC	6
<i>Chrysococcyx caprius</i> (Boddaert, 1783)	Dideric Cuckoo	M/R	f.	LC	2
<i>Cuculus solitarius</i> Stephens, 1815	Red-chested Cuckoo	R/M	F	LC	13
<i>Cuculus gularis</i> Stephens, 1815	African Cuckoo	M	f.	LC	7
Musophagiformes					
Musophagidae					
<i>Crinifer piscator</i> (Boddaert, 1783)	Western Grey Plantain-eater	R	f.	LC	12
<i>Musophaga violacea</i> Isert, 1788	Violet Turaco	R	f.	A04 LC	21
Pelecaniformes					
Ardeidae					
<i>Ixobrychus sturmii</i> (Wagler, 1827)	Dwarf Bittern	M	E	LC	5
<i>Nycticorax nycticorax</i> (Linné, 1758)	Black-crowned Night Heron	R/P	E	LC	2
<i>Butorides striata</i> (Linné, 1758)	Green-backed Heron	R	E	LC	7
<i>Ardeola ralloides</i> (Scopoli, 1769)	Common Squacco Heron	R/M	E	LC	1
<i>Bubulcus ibis</i> (Linné, 1758)	Cattle Egret	R/M	E	LC	21
<i>Ardea cinerea</i> Linné, 1758	Grey Heron	R/P	E	LC	2
<i>Ardea melanocephala</i> Children & Vigors, 1826	Black-headed Heron	R/M	E	LC	3
<i>Ardea brachyrhyncha</i>	Dimorphic Egret	R/M	E	LC	3
Scopidae					
<i>Scopus umbretta</i> Gmelin, 1789	Hamerkop	R	E	LC	5
Suliformes					
Phalacrocoracidae					
<i>Microcarbo africanus</i> (Gmelin, 1789)	Reed Cormorant	R	E	LC	1
Charadriiformes					
Burhinidae					
<i>Burhinus senegalensis</i> (Swainson, 1837)	Senegal Thick-knee	R	E	LC	4
Charadriidae					
<i>Vanellus senegallus</i> (Linné, 1766)	Wattled Plover	R/M	E	LC	20
Jacanidae					
<i>Actophilornis africanus</i> (J. F. Gmelin, 1789)	African Jacana	R	E	LC	4
Scolopacidae					
<i>Actitis hypoleucos</i> (Linné, 1758)	Common Sandpiper	P	E	LC	1
Strigiformes					
Strigidae					
<i>Otus senegalensis</i> (Swainson, 1837)	African Scops-owl	R	f.	LC	2
Accipitriformes					
Accipitridae					
<i>Elanus caeruleus</i> (Desfontaines, 1789)	Black-shouldered Kite	R	f.	LC	1
<i>Aviceda cuculoides</i> Swainson, 1837	African Cuckoo Hawk	R	F	LC	1
<i>Circaetus cinerascens</i> von Muller, 1851	Western Banded Snake Eagle	R	F	LC	1
<i>Kaupifalco monogrammicus</i> (Temminck, 1824)	Lizard Buzzard	R	f.	LC	5
<i>Melierax metabates</i> Heuglin, 1861	Dark Chanting Goshawk	R	f.	LC	1
<i>Micronisus gabar</i> (Daudin, 1800)	Gabar Goshawk	R	f.	LC	2
<i>Circus aeruginosus</i> (Linné, 1758)	Eurasian Marsh-Harrier	P	f.	LC	1
<i>Accipiter badius</i> (Gmelin, 1788)	Shikra	R/M	F	LC	3
<i>Accipiter ovampensis</i> Gurney, 1875	Ovampo Sparrowhawk	M	F	LC	3
<i>Milvus egyptius</i>	Yellow-billed Kite				8
<i>Buteo auguralis</i> Salvadori, 1865	Red-necked Buzzard	R/M	F	LC	1
Bucerotiformes					
Bucerotidae					
<i>Lophoceros nasutus</i> (Linné, 1766)	African Grey Hornbill	R	f.	LC	35
<i>Lophoceros fasciatus</i> (Shaw, 1812)	Allied Hornbill	R	F	A05 LC	2
<i>Tockus erythrorhynchus</i> (Temminck, 1823)	Red-billed Hornbill	R	f.	LC	6
Coraciiformes					

Meropidae						
<i>Merops apiaster</i> Linné, 1758	European Bee-eater	P	f.		LC	3
<i>Merops hirundineus</i> A. A. H. Lichtenstein, 1793	Swallow-tailed Bee-eater	R/M	f.		LC	21
Coraciidae						
<i>Coracias naevius</i> Daudin, 1800	Purple Roller	R/M	f.		LC	2
<i>Coracias abyssinicus</i> Hermann, 1783	Abyssinian Roller	M	f.		LC	4
<i>Coracias cyanogaster</i> Cuvier, 1816	Blue-bellied Roller	R	f.	A04	LC	12
Alcedinidae						
<i>Ispidina picta</i> (Boddaert, 1783)	Pygmy Kingfisher	R/M	f.		LC	7
<i>Corythornis cristatus</i> (Pallas, 1764)	Malachite Kingfisher	R	f.		LC	1
<i>Halcyon leucocephala</i> (Statius Muller, 1776)	Grey-headed Kingfisher	M	f.		LC	9
<i>Halcyon malimbica</i> (Shaw, 1811)	Blue-breasted Kingfisher	R	F		LC	1
Piciformes						
Lybiidae						
<i>Pogonulus chrysoconus</i> (Temminck, 1832)	Yellow-fronted Tinkerbird	R	f.		LC	16
<i>Lybius vieilloti</i> (Leach, 1815)	Vieillot's Barbet	R	f.		LC	5
<i>Lybius dubius</i> (Gmelin, 1788)	Bearded Barbet	R	f.	A04	LC	1
Indicatoridae						
<i>Indicator indicator</i> (Sparrman, 1777)	Greater Honeyguide	R	f.		LC	1
Falconiformes						
Falconidae						
<i>Falco tinnunculus</i> Linné, 1758	Common Kestrel	R/P	f.		LC	2
<i>Falco ardosiaceus</i> Vieillot, 1823	Grey Kestrel	R	f.		LC	2
<i>Falco biarmicus</i> Temminck, 1825	Lanner Falcon	R	f.		LC	3
Psittaciformes						
Psittacidae						
<i>Poicephalus senegalus</i> (Linné, 1766)	Senegal Parrot	R	f.	A04	LC	5
<i>Psittacula krameri</i> (Scopoli, 1769)	Rose-ringed Parakeet	R	f.		LC	2
Passeriformes						
Oriolidae						
<i>Oriolus auratus</i> Vieillot, 1817	African Golden Oriole	M	f.		LC	16
Prionopidae						
<i>Prionops plumatus</i> (Shaw, 1809)	White Helmet-shrike	R	f.		LC	25
Platysteiridae						
<i>Batis senegalensis</i> (Linné, 1766)	Senegal Batis	R	F/f		LC	3
<i>Platysteira cyanea</i> (Muller, 1776)	Scarlet-spectacled Wattle-eye	R	f.		LC	8
Malaconotidae						
<i>Malaconotus blanchoti</i> Stephens, 1826	Grey-headed Bush-shrike	R	f.		LC	9
<i>Dryoscopus gambensis</i> (Lichtenstein, 1823)	Northern Puff-back	R	F		LC	10
<i>Tchagra senegalus</i> (Linné, 1766)	Black-crowned Tchagra	R	f.		LC	4
<i>Chlorophoneus multicolor</i> (G. R. Gray, 1845)	Many-coloured Bush-shrike	R	F		LC	1
<i>Laniarius aethiopicus</i> (J. F. Gmelin, 1788)	Tropical Boubou	R	f.		LC	1
<i>Laniarius barbarus</i> (Linné, 1766)	Yellow-crowned Gonolek	R	f.		LC	19
Dicruridae						
<i>Dicrurus adsimilis</i> (Bechstein, 1794)	Fork-tailed Drongo	R	F		LC	12
Monarchidae						
<i>Terpsiphone rufiventer</i> (Swainson, 1837)	Red-bellied Paradise-flycatcher	R	F	A05	LC	26
Laniidae						
<i>Corvinella corvina</i> (Shaw, 1809)	Yellow-billed Shrike	R	f.	A04	LC	7
Corvidae						
<i>Ptilostomus afer</i> (Linné, 1766)	Piapiac	R	f.	A04	LC	2
<i>Corvus albus</i> Statius Muller, 1776	Pied Crow	R	f.		LC	13
Stenostiridae						
<i>Elminia longicauda</i> (Swainson, 1838)	Blue Flycatcher	R	F/f		LC	1
Remizidae						
<i>Anthoscopus parvulus</i> (Heuglin, 1864)	West African Penduline Tit	R	f.	A04	LC	1
Alaudidae						
<i>Galerida modesta</i> Heuglin, 1864	Sun Lark					6
Cisticolidae						

<i>Eremomela pusilla</i> Hartlaub, 1857	Green-backed Eremomela	R	f.	A04	LC	11
<i>Camaroptera brachyura</i> (Vieillot, 1820)	Bleating Bush Warbler	R	f.		LC	20
<i>Cisticola cantans</i> (Heuglin, 1869)	Singing Cisticola	R	f.		LC	3
<i>Cisticola brachypterus</i> (Sharpe, 1870)	Siffling Cisticola	R	f.		LC	1
<i>Cisticola juncidis</i> (Rafinesque, 1810)	Zitting Cisticola	R	f.		LC	1
<i>Prinia subflava</i> (J. F. Gmelin, 1789)	Tawny-flanked Prinia	R	f.		LC	3
Hirundinidae						
<i>Hirundo lucida</i> Hartlaub, 1858	Red-chested Swallow	R	f.		LC	4
Pycnonotidae						
<i>Atimastillas flavicollis</i> (Swainson, 1837)	Yellow-throated Leaflove	R	F		LC	4
<i>Chlorocichla simplex</i> (Hartlaub, 1855)	Simple Greenbul	R	F	A05	LC	1
<i>Pycnonotus barbatus</i> (Desfontaines, 1789)	Garden Bulbul	R	f.		LC	71
Zosteropidae						
<i>Zosterops senegalensis</i> Bonaparte, 1850	Yellow White-eye	R	F/f		LC	4
Leiotherichidae						
<i>Turdoides reinwardtii</i> (Swainson, 1831)	Black-cap Babbler	R	f.	A04	LC	3
<i>Turdoides plebejus</i> (Cretzschmar, 1828)	Brown Babbler	R	f.		LC	21
Sturnidae						
<i>Lamprotornis caudatus</i> (Muller, 1776)	Northern Long-tailed Starling	R	f.		LC	2
<i>Lamprotornis purpureus</i> (Statius Muller, 1776)	Purple Glossy-starling	R	f.	A04	LC	15
<i>Cinnyricinclus leucogaster</i> (Boddaert, 1783)	Violet-backed Starling	M	f.		LC	4
Turdidae						
<i>Turdus pelios</i> Bonaparte, 1850	African Thrush	R	f.		LC	21
Muscicapidae						
<i>Melaenornis edoloides</i> (Swainson, 1837)	Western Black-flycatcher	R	F/f		LC	4
<i>Cossypha niveicapilla</i> (Lafresnaye, 1838)	Snowy-headed Robin-chat	R	F		LC	9
<i>Cossypha albicapillus</i> (Vieillot, 1818)	White-crowned Robin-chat	R	f.	A04	LC	1
<i>Ficedula hypoleuca</i> (Pallas, 1764)	Pied Flycatcher	P	F/f		LC	4
Nectariniidae						
<i>Anthreptes longuemarei</i> (Lesson, 1833)	Violet-backed Sunbird	R	f.		LC	2
<i>Hedydipna collaris</i> (Vieillot, 1819)	Collared Sunbird	R	F		LC	2
<i>Hedydipna platyura</i> (Vieillot, 1819)	Pygmy Sunbird	M	F		LC	2
<i>Cyanomitra verticalis</i> (Latham, 1790)	Green-headed Sunbird	R	F		LC	2
<i>Chalcomitra adelberti</i> (Gervais, 1834)	Buff-throated Sunbird	R	FF	A05	LC	1
<i>Chalcomitra senegalensis</i> (Linné, 1766)	Scarlet-chested Sunbird	R	f.		LC	39
<i>Cinnyris pulchellus</i> (Linné, 1766)	Beautiful Sunbird	R	F		LC	6
<i>Cinnyris coccinigastrus</i> (Latham, 1802)	Splendid Sunbird	R	f.	A04	LC	8
<i>Cinnyris venustus</i> (Shaw, 1799)	Yellow-bellied Sunbird	R	f.		LC	35
<i>Cinnyris cupreus</i> (Shaw, 1812)	Copper Sunbird	R	f.		LC	5
Ploceidae						
<i>Quelea erythrops</i> (Hartlaub, 1848)	Red-headed Quelea	M	f.		LC	3
<i>Euplectes afer</i> (J. F. Gmelin, 1789)	Yellow-crowned Bishop	R	f.		LC	2
<i>Euplectes franciscanus</i> (Isert, 1789)	Northern Red Bishop	R	f.		LC	80
<i>Euplectes macroura</i> (Gmelin, 1789)	Yellow-mantled Widowbird	R	f.		LC	1
<i>Ploceus heuglini</i> Reichenow, 1886	Heuglin's Masked-weaver	R	f.	A04	LC	3
<i>Ploceus cucullatus</i> (Statius Muller, 1776)	Village Weaver	R	f.		LC	36
<i>Anaplectes rubriceps</i> (Sundevall, 1850)	Red-headed Weaver	R	F		LC	4
Estrildidae						
<i>Lagonosticta senegala</i> (Linné, 1766)	Red-billed Firefinch	R	f.		LC	27
<i>Uraeginthus bengalus</i> (Linné, 1766)	Red-cheeked Cordon-bleu	R	f.		LC	39
<i>Estrilda caerulescens</i> (Vieillot, 1817)	Lavender Waxbill	R	f.	A04	LC	3
<i>Estrilda melpoda</i> (Vieillot, 1817)	Orange-cheeked Waxbill	R	f.		LC	6
<i>Lonchura cucullata</i> (Swainson, 1837)	Bronze Mannikin	R	f.		LC	120
Viduidae						
<i>Vidua macroura</i> (Pallas, 1764)	Pin-tailed Whydah	R	f.		LC	8
<i>Vidua chalybeata</i> (Muller, 1776)	Village Indigobird	R	f.		LC	2
<i>Vidua camerunensis</i> (Grote, 1922)	Cameroon Indigobird	R	f.		LC	1
Passeridae						
<i>Passer griseus</i> (Vieillot, 1817)	Grey-headed Sparrow	R	f.		LC	11
<i>Gymnoris dentata</i> (Sundevall, 1850)	Bush Petronia	R	f.	A04	LC	13

Motacillidae						
<i>Anthus leucophrys</i> Vieillot, 1818	Plain-backed Pipit	R	f.	LC	4	
Fringillidae						
<i>Crithagra mozambica</i> (P. L. Stadius Müller, 1776)	Yellow-fronted Canary	R	f.	LC	3	

The FCMK bird community includes approximately as many passerine species (49.27%) as non-passeriform species (50.73%). On the other hand, there are significantly more passerine individuals (58.43%) than non-passeriform individuals (41.57%).

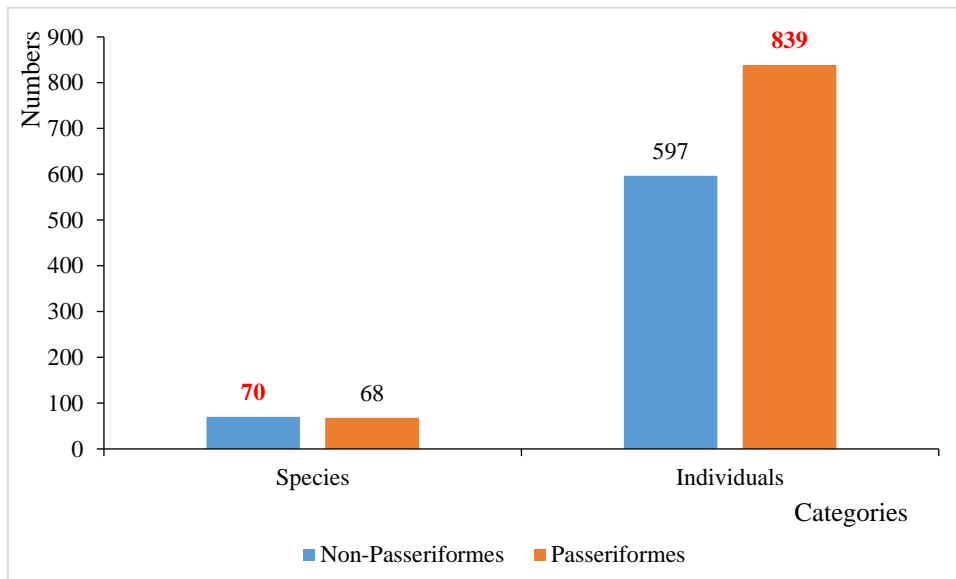


Figure 8 : Comparison of Passeriformes and non-Passeriformes based on species and their abundances

Among the non-Passeriformes orders, the Accipitriformes have the greatest specific richness with 11 species followed by the Pelecaniformes and the Coraciiformes. On the other hand, it is the Columbiformes which concentrate the greatest abundance with 209 individuals, followed very far away by the Coraciiformes (60 individuals).

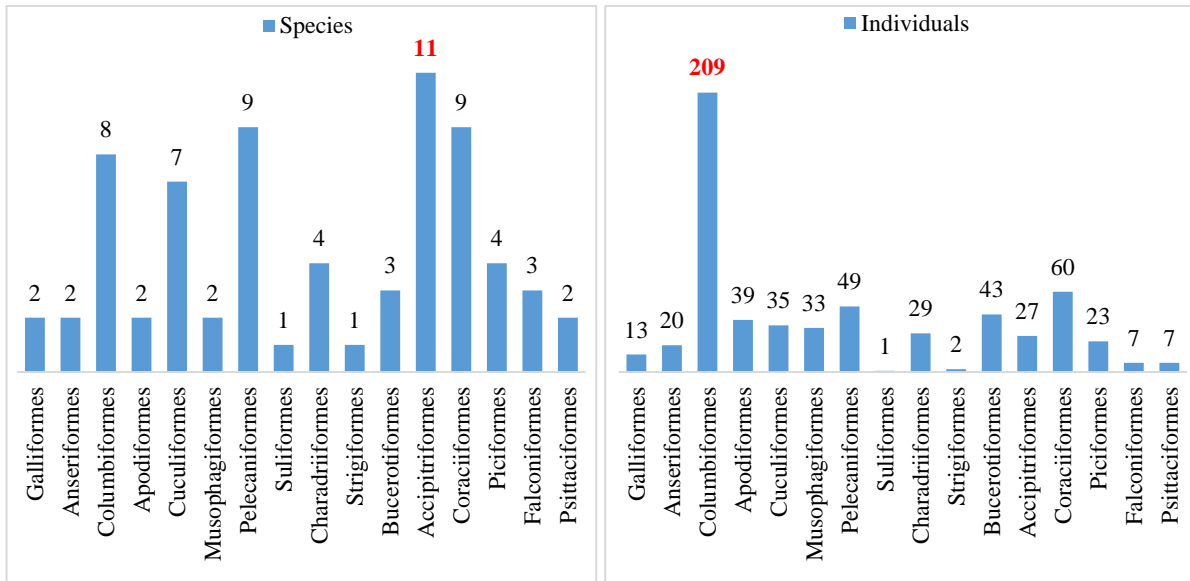


Figure 9 : Specific richness and abundance of birds by order

Considering the abundance indices, the bird community of the FCMK is dominated by regular species which represent 48.40% of the overall abundance even though they represent only 18.84% of the species richness which is largely composed of rare species (43.48%). Three species are dominant with a relative abundance frequency greater than 5%.

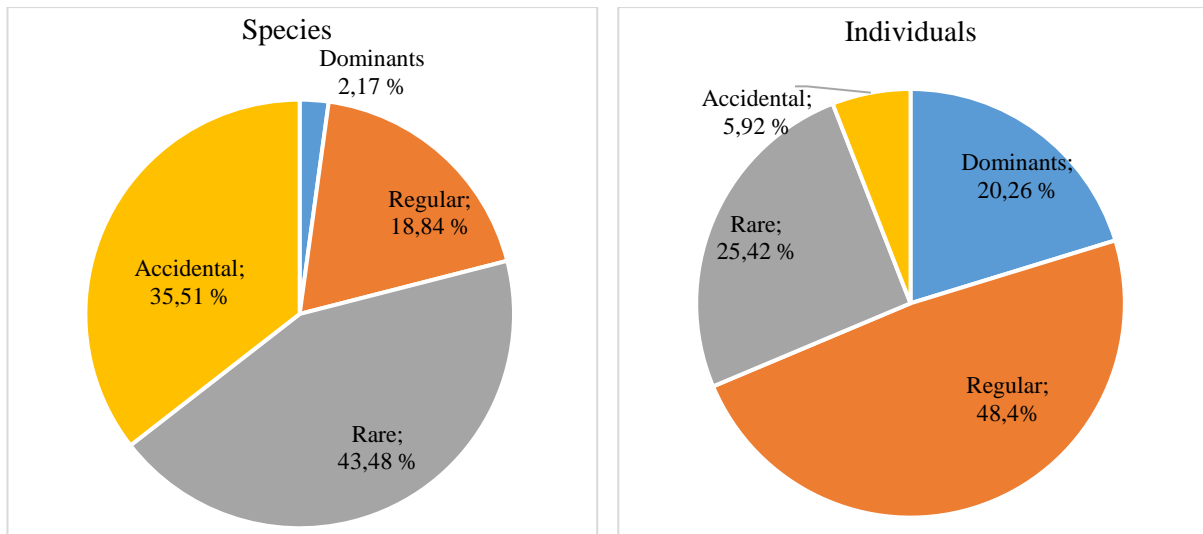


Figure 10 : Structure of the FCMK bird population according to the abundance index

The analysis of the structure of the avifauna of the FCMK taking into account the preferred living environments of the birds shows an ultra predominance of birds from open environments. This denotes the state of health of the classified forest. Only 18.84% of the bird species are forest birds. In addition, 11.59% of the species observed are water birds (Figure 11).

The FCMK is also visited by some species of migratory birds. In fact, 15 migratory species are recorded, 05 of which come from the Palearctic (*Apus apus*, *Actitis hypoleucos*, *Circus*

aeruginosus, *Merops apiaster* and *Ficedula hypoleuca*). The other 10 migratory species come from the Sahelian regions of Africa (*Clamator levaillantii*, *Cuculus gularis*, *Ixobrychus sturmii*, *Accipiter ovampensis*, *Coracias abyssinicus*, *Halcyon leucocephala*, *Oriolus auratus*, *Cinnyricinclus leucogaster*, *Hedydipna platura* and *Quelea erythroptera*).

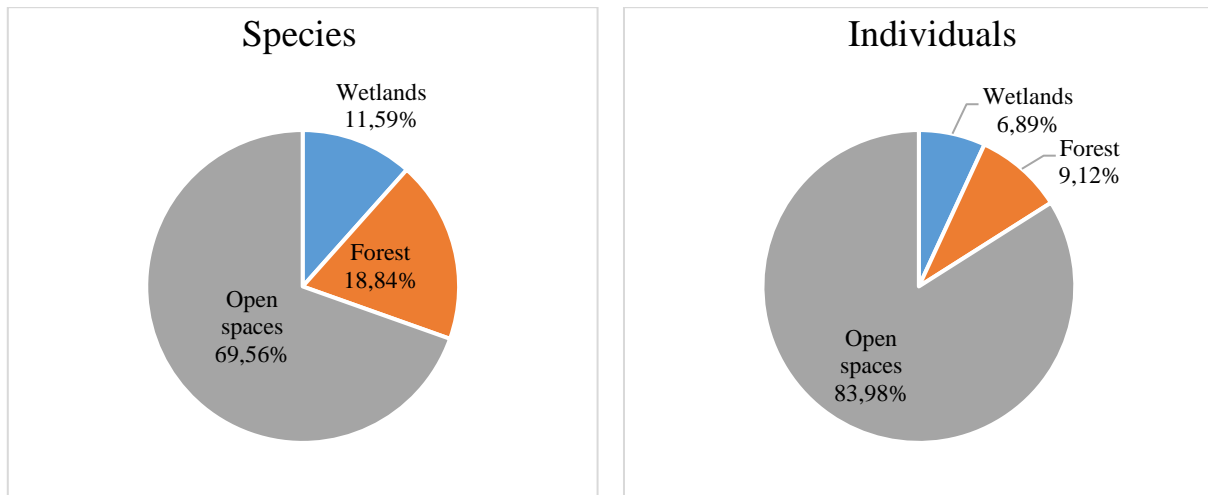


Figure 11 : Structure of the FCMK bird community according to preferred habitat

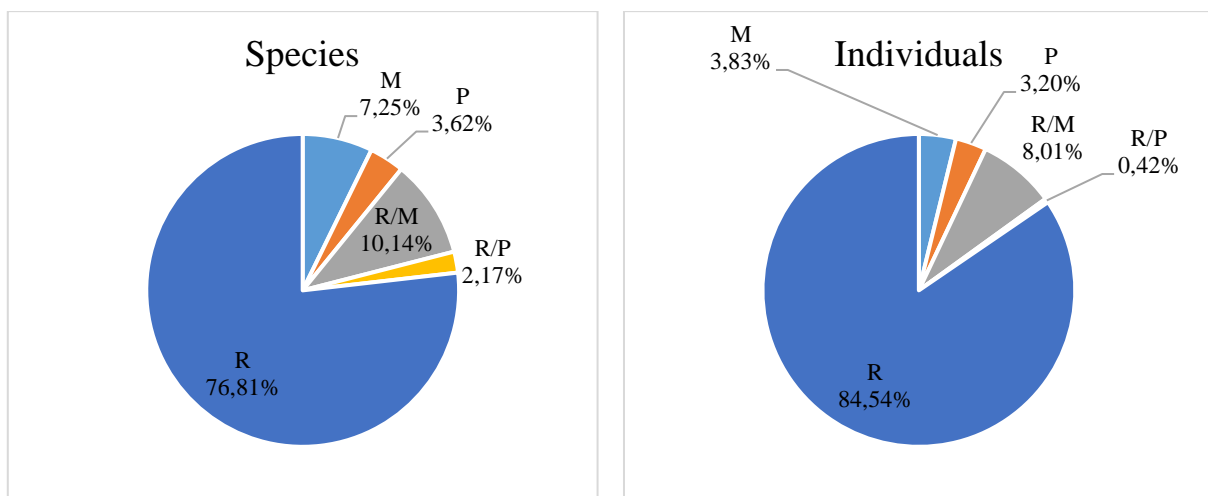


Figure 12 : Structure of the FCMK bird community according to biogeographic origin

V. Some potential threats to birds

In one year of monitoring birds and human activities in the classified forest of Mount Korhogo, it was possible to highlight, for the first time, the diversity of birds that visit this environment. All the species observed in this environment are included on the red list of threatened species as Least Concern (LC). This is a categorization of threat at the international or global level. But there is no national or regional red list to take into account local threats to all of these species.

Despite the absence of species listed as threatened on the IUCN Red List, it should be noted that the FCMK faces several types of threats of essentially human origin and involving local populations as well as forest managers. The threats to the forest and the birds that live there are of various kinds. These include livestock transhumance, tree felling, illegal dumping, fishing, agriculture, the use of motorized vehicles, hunting and fragmentation materialized by the presence of several tracks inside the forest in addition to the various official development tracks.

5.1. Tracks and paths

The classified forest of Mount Korhogo is crossed along its entire length by the A12 national road which connects the city of Korhogo to that of Boundiali. In the heart of the forest, a checkpoint (police, gendarmerie, forestry service) has been installed to control the large flow of vehicles. This causes noise pollution, fragmentation and especially plastic pollution resulting from the biological needs of the users of this road. This would therefore constitute a form of threat and disturbance for the birds in the environment.

The forest is also crossed by a large network of tracks resulting from the transhumance of cattle and sheep within the forest. These tracks are also access routes for local residents into the forest either to reach two residential areas outside the FCMK, or to go about their activities within the FCMK such as agriculture, wood harvesting, religious activities, hunting.



Figure 13 : Images of some tracks inside the classified forest of Mount Korhogo

5.2. Livestock transhumance

All the plots selected for this study are affected by the phenomenon of transhumance within the classified forest. The intensity of this activity is practically identical from one plot to another. However, plot 3, which is the cultivation area but also a meadow, is a little more intensely visited by livestock. The consequences of this activity, in addition to the creation of tracks, are the trampling and compaction of the soil, competition with the biodiversity of the environment for access to water, especially in times of drought, and disturbance when livestock pass through.

5.3. Harvesting of wood resources

This is certainly the greatest threat observed in the FCMK. Indeed, logging is prohibited in Côte d'Ivoire above the eighth parallel, as recommended by the forestry law. However, faced with the transformation of the peri-urban landscape due to usage patterns, particularly through the transformation of natural landscapes into agricultural land, the FCMK is to date the only wooded area on the outskirts of the city. As a result, populations depend almost exclusively on the FCMK for their supply of firewood and building materials. Teak plantations are used to supply support stakes for constructions and natural species are harvested to constitute firewood mainly by women (Figure 14).

The information collected indicates financial transactions between the populations and the forest managers who, on this basis, authorize felling in the FCMK. All the plots recorded felling with a stronger pressure at the level of plots 2 and 4 which are in contact with the residential districts. These fellings repeated year after year have a direct consequence on the physiognomy of the forest characterized by an absence of large trees, a predominance of shrubs and more thickets and scrub.

5.4. Illegal dumps

The classified forest of Mount Korhogo is unfortunately the dumping ground for domestic, agricultural, pharmaceutical waste and rubble from construction sites. The plots affected by this phenomenon are plots 2 and 4. These illegal dumps of waste are done in a sly manner and some of these dumps date back several years and others are regularly replenished (Figure 14).

5.5. Agriculture

In the FCMK, agriculture is only practiced in plot 3, which is a lowland made up of a floodplain dotted with temporary ponds. These ponds are the remains of the construction sand extraction activity that used to take place in the classified forest in the past. The crops grown vary with the season. During the rainy season, with the flooding of the plain, irrigated rice growing is practiced. Rice growing gives way to market gardening crops practiced in the dry season. The FCMK management plan authorizes the lowlands to be used for agriculture with non-perennial crops. However, the danger of this activity for the environment lies in the use by farmers of chemical phytosanitary products.

5.6. Other human activities

Hunting is also a very present practice within the classified forest. Signs of hunting, such as the presence of buckshot casings and gunshots, were observed and heard mainly in plot 3. In addition, sites where birds were plucked were observed in the classified forest, particularly in plot 3. However, there was no indication that this was a human act (Figure 15).

Religious practices are also well established in the classified forest. Indeed, several indications of sacrificial practices were observed in plots 2 and 4. These include offerings to divinities and ritual sites (Figure 15).

Fishing is an activity that has been observed in the dry season when water becomes scarce in the classified forest, with the drying up of the river and the drying up of temporary ponds. The fishing practiced then consists of emptying the still existing water reservoirs, through a transfer mechanism in order to collect all the fish trapped in the mud (catfish and tilapia).

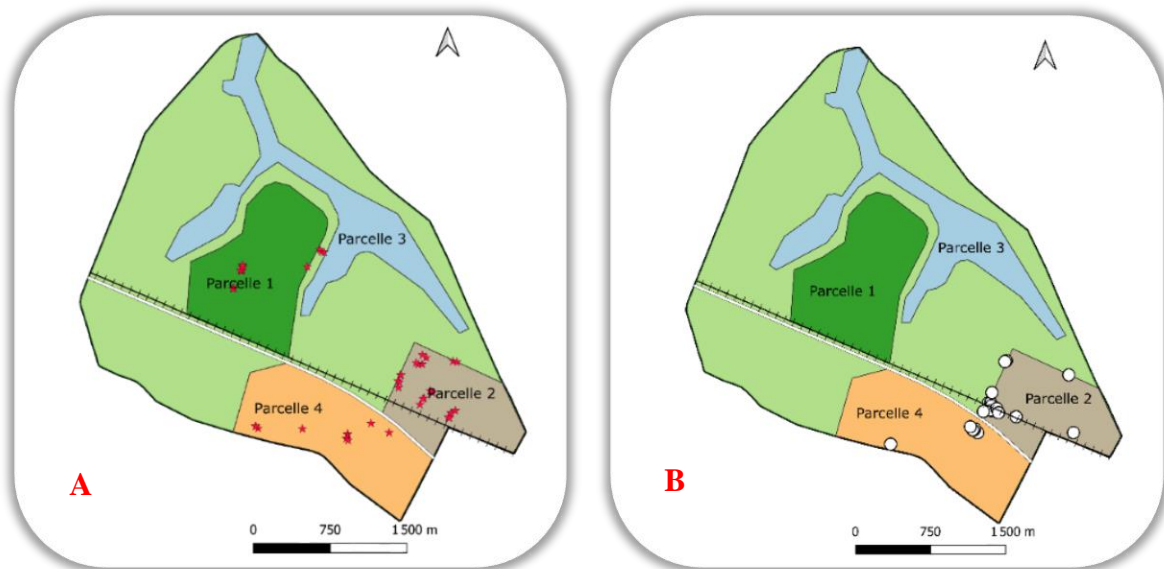


Figure 14 : Distribution of logging activities (A) and dump sites (B) within the FCMK

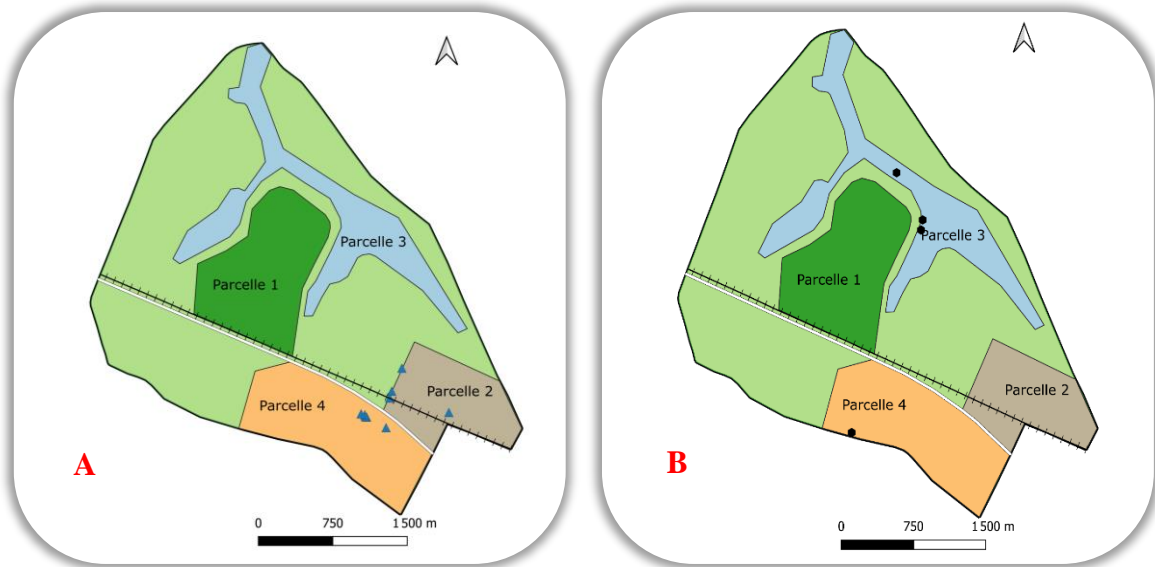


Figure 15 : Distribution of religious activities (A) and hunting (B) within the FCMK

VI. Impact of human activities on FCMK birds and bird species of conservation interest

Of the 138 species inventoried, only 26 (18.84%) of them are birds confined to forest environments. More than half of the species observed are birds confined to open environments. This shows the state of degradation of the classified forest due in large part to the abusive removal of woody plants in the classified forest. There is therefore an urgent need to act in order, on the one hand, to put an end to human aggression in the classified forest and on the other hand, to put in place restoration measures in order to preserve this endangered heritage.

Although the FCMK does not contain any threatened species on the IUCN global red list, several species are of interest for this site. First, there are all 26 species dependent on forest environments. To these species, we can also associate the 15 species endemic to the Sudano-Guinean savannah biome as well as the 16 species of water birds including *Plectropterus gambensis*, *Ixobrychus sturmii*, *Nycticorax nycticorax* and *Ardea melanocephala*. The conservation interest of the FCMK also lies in the presence of 14 species of raptors including one species of Strigiformes, 10 species of Accipitriformes and three species of Falconiformes, with the presence of species such as *Aviceda cuculoides*, *Circaetus cinerascens*, *Accipiter ovampensis* and *Buteo augularis*. The classified forest of Mount Korhogo is also a proven breeding site for *Accipiter ovampensis*, making the FCMK the first known site in Côte d'Ivoire where this species has been observed nesting.



Figure 16 : Some images of anthropogenic activities observed in the FCMK from October 2023 to September 2024

A – B : Tree felling in the FCMQ
 C – D – E : Hunting indices in the FCMK
 F – G : Illegal dumps in the FCMK



Streptopelia vinacea



Lonchura cucullata



Euplectes franciscanus



Prionops plumatus



Accipiter ovampensis



Tockus erythrorhynchus



Ixobrychus sturmii



Batis senegalensis



Terpsiphone rufiventer



Lagonosticta senegala



Buteo augularis



Merops hirundineus

Some species of birds observed in the FCMK

VII. Recommendations

Following this first assessment of the birdlife potential and in view of the threats weighing on this important peri-urban area, and the importance of the results obtained, we make the following recommendations:

- 1- Strengthen monitoring measures for the FCMK;
- 2- Reduce access and actions by local populations and bring them into line with current legal provisions;
- 3- Improve the management and development of the FCMK, by replacing commercial species with native species that have disappeared and by prohibiting wood harvesting;
- 4- Raise awareness among local populations and local elected officials about the need to preserve the FCMK so that it can play the role of a green lung and a reservoir of biodiversity ;
- 5- Effectively combat any form of abusive and unsustainable use of the classified forest;
- 6- Promote and intensify scientific studies and research within the classified forest;
- 7- Propose the classified forest for inclusion on the list of protected areas and reserves of Côte d'Ivoire, particularly as an urban protected area in order to strengthen the protection of the site and highlight its role in reducing the effects of global warming and the conservation of biodiversity;
- 8- Continue monitoring the avian fauna of the classified forest in order to serve as an indicator of the health and management status of the FCMK.

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