

CONSERVATION AREAS MONITORING AT UBIMA AND ELELE ESTATES OF SIAT NIGERIA LIMITED

By

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Submitted To:



SIAT NIGERIA LIMITED

DECEMBER, 2022

LIST OF ACRONYMS

CA -	Conservation Area
HCV -	High Conservation Value
IFL -	Intact Forest Landscape
IUCN -	International Union for Conservation of Nature
LC -	Least Concern in conservation status
LGA -	Local Government Area
NA -	Not assessed against IUCN standard
NT -	Near Threatened species
SNL -	Siat Nigeria Limited
SOP -	Standard Operating Procedure
RD -	Relative Density
RTE -	Rare, Threatened and Endangered species
VU -	Vulnerable species
WCMC -	World Conservation Monitoring Centre

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1.0 INTRODUCTION

1.1 Background

High conservation value (HCV) and high carbon stock concepts have proved a very useful tool in maintaining ecosystem, social and cherished-cultural values, especially in areas, where development activities on large expanse of lands are pertinent and/or unavoidable. It is much more important considerations, where such activities are expected to be carried out in areas presumed to contain flora and fauna species considered to be very important, particularly on global, regional or national scales. Consequently, responsible organizations and large-commodity producers, particularly those, who are striving to achieve, maintain, or comply with certain certification standards for a range of commodities, adopted the concepts as part of standard operating procedures (SOPs), and incorporated them as environmental and social good practices. From the view point of environmental responsibility, conservation of natural resources as well as biodiversity, and responsible development of new plantings or replanting, which include respecting local people's right as well as conserving forest and other valuable ecosystems.

Following high conservation values assessments at Ubima and Elele Estates conducted in 2017, and subsequent designation of locations, where those values were confirmed to have been present within the two concessions as conservation areas, with procedures and plans for their managements, it is important to periodically evaluate the degree to which the implementations of management and action plans are effective. This is possible through field observations to ascertain whether a particular strategy yielded desired results, and to know whether there is need for modification(s) of any style/approach or not. This would be difficult without a coordinated conservation area monitoring programme.

Understanding the reason(s) and driving forces for a decline in conservation areas and HCV status can help the company to know which management activities may not be effective, and what management changes would be necessary to reverse the negative trend or enhance positive attributes in the HCV and conservation areas. In addition, it is important to monitor the effectiveness of management actions, and to evaluate current and potential threats to the identified HCVs in the conservation areas of the two estates.

1.2 Purpose of the Conservation Areas Monitoring

The goal of this monitoring exercise is to assess the current status of the conservation areas as a means of ascertaining the effectiveness of the implementation of adopted strategies with a view of modifying or improving the existing management styles and actions for a better result with protections of the conservation areas and biodiversity therein as a culture respected by all stakeholders. Essentially, this involved field verifications of the impacts and effectiveness of the management strategies by conducting biodiversity surveys in the conservation areas, where actions were already being implemented through coordinated efforts by the Eco-guards. Specifically, the objectives were:

- i. To follow up conservation areas and/or HCV action plans to understand what has been implemented, and the existing gaps in current implementations;

- ii. To survey flora and fauna especially RTE species and other indicator species as well as evaluating the current states of conservation areas;
- iii. To make contributions to the implementations of certain activities and items of the action plans, based on the identified gaps in effectiveness of the management options and strategies;
- iv. To identify current and potential (external and internal) threats to the HCVs and conservation areas, their sources and/or causal factors.

1.3 Key Activities

Considering the dynamism of usual challenges in conservation areas management, which could make it difficult to make a sharp contrast between a decline in conservation areas occasioned by, or due to weak implementation of management strategies, and that due to (well-implemented, but) ineffective management strategies, field activities were executed as follows:

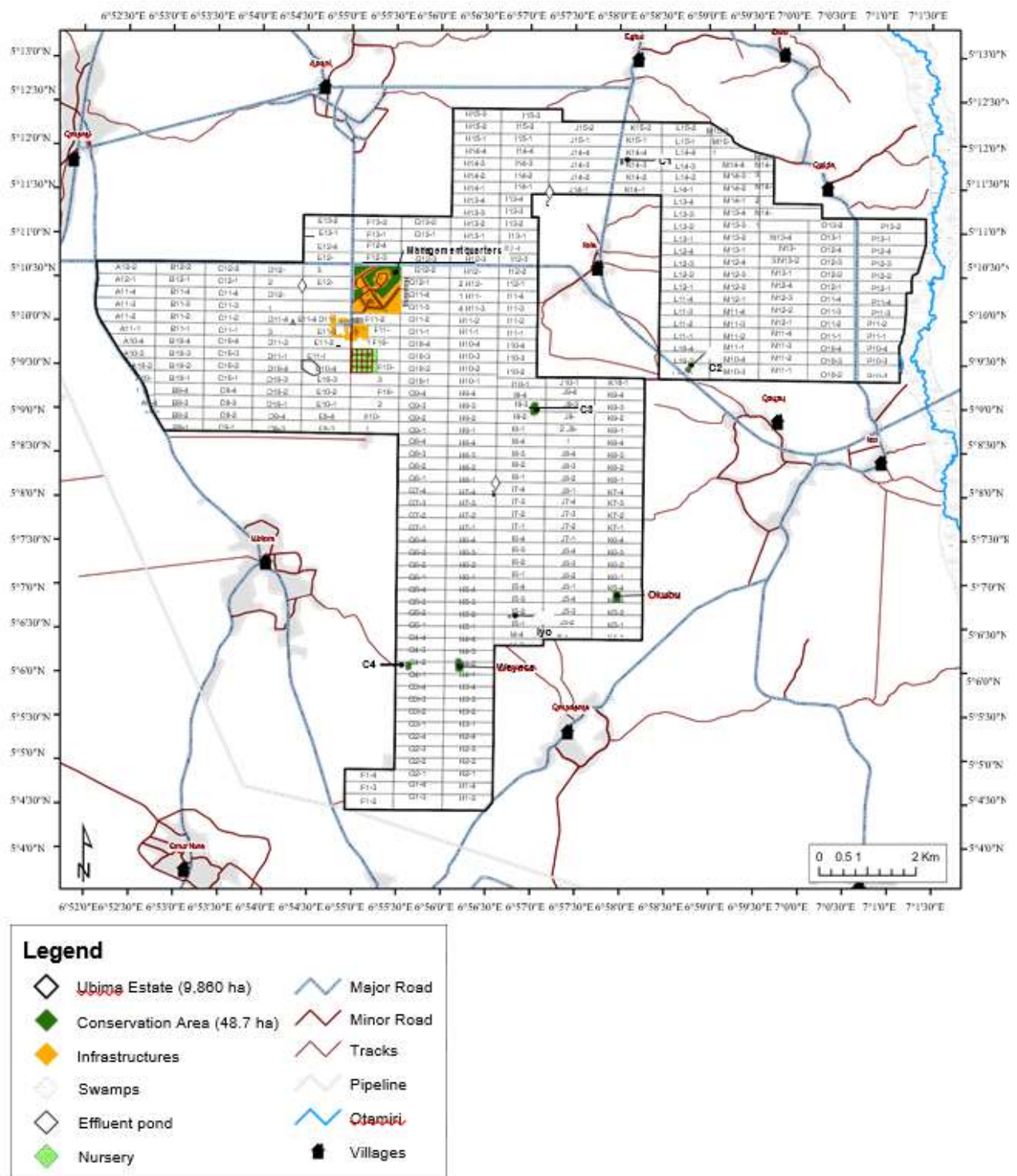
1. Evaluation of the implementation of the conservation areas management to match actions with documented plans and strategies. This allowed for an appraisal of compliances with existing conservation areas action plans by all affected stakeholders.
2. Assessment of the effectiveness of the current conservation areas management options and strategies in maintaining and/or enhancing the identified HCVs. This involved assessment of HCV management objectives and whether the targets set out in the plans were being met, and whether management prescriptions were sufficiently effective in maintaining the HCVs or enhancing their developments. This entailed flora and fauna surveys, host communities' engagements, as deemed necessary, and depending on their availability.
3. Investigation of current and potential threats to the identified HCVs and conservation areas in the estates. This involved evaluating changes to the HCVs, monitor internal and external threats identified in the course of initial threat assessment process, and the possibility of new threat developing in the HCV and conservation areas.

2.0 THE CONSERVATION AREAS

2.1 Brief Descriptions of Ubima and Elele Estates

Ubima Oil Palm Estate is located about 30 km north of Port Harcourt within latitudes 5.0738 and 5.2066°N, and longitudes 6.8684 and 7.0240°E, largely, within the de-reserved Otamiri Forest Reserve in Ikwere and part of Etche Local Government Areas of Rivers State. The plantation is bounded in the north-east by Otamiri River from where the name of the reserve was derived. According to Proforest (2017a), about 8,278 ha (about 87%) of the plantation lies within the former Otamiri River Forest Reserve. Meanwhile the entire estate covers about 9,860 ha in land area (Figure 1).

On the other hand, Elele Oil Palm Estate is located approximately 40 km north of Port Harcourt, about 39 km from Ubima Estate. It lies between latitudes 5.0743 and 5.19813°N, and longitudes 6.704 and 6.7763°E in Emuoha Local Government Area of Rivers State, Nigeria (Figure 2). According to Proforest (2017b), about 5,414 ha (92%) of the plantation lies within the former Sambrero Forest Reserve in River State. The entire concession at Elele covers 6,316 ha in land area (Figure 2).



2.2 Descriptions of the Conservation Areas at Ubima and Elele Estates

A total of 8 and 4 conservation areas, including swamps, wetlands, pits and patches of secondary forests in dryland and creek have been delineated and managed at Ubima and Elele Estates, respectively. These conservation areas have been recognized to harbour HCVs 1, 3 and 6 (at Ubima) as well as 1, 3, 4 and 6 (at Elele) within the two concessions. In total, there are approximately 48.7 ha and 291.1 ha of managed conservation areas at Ubima and Elele Estates, respectively. These areas are scattered within the two plantations (as shown in Figures 3 and 4).

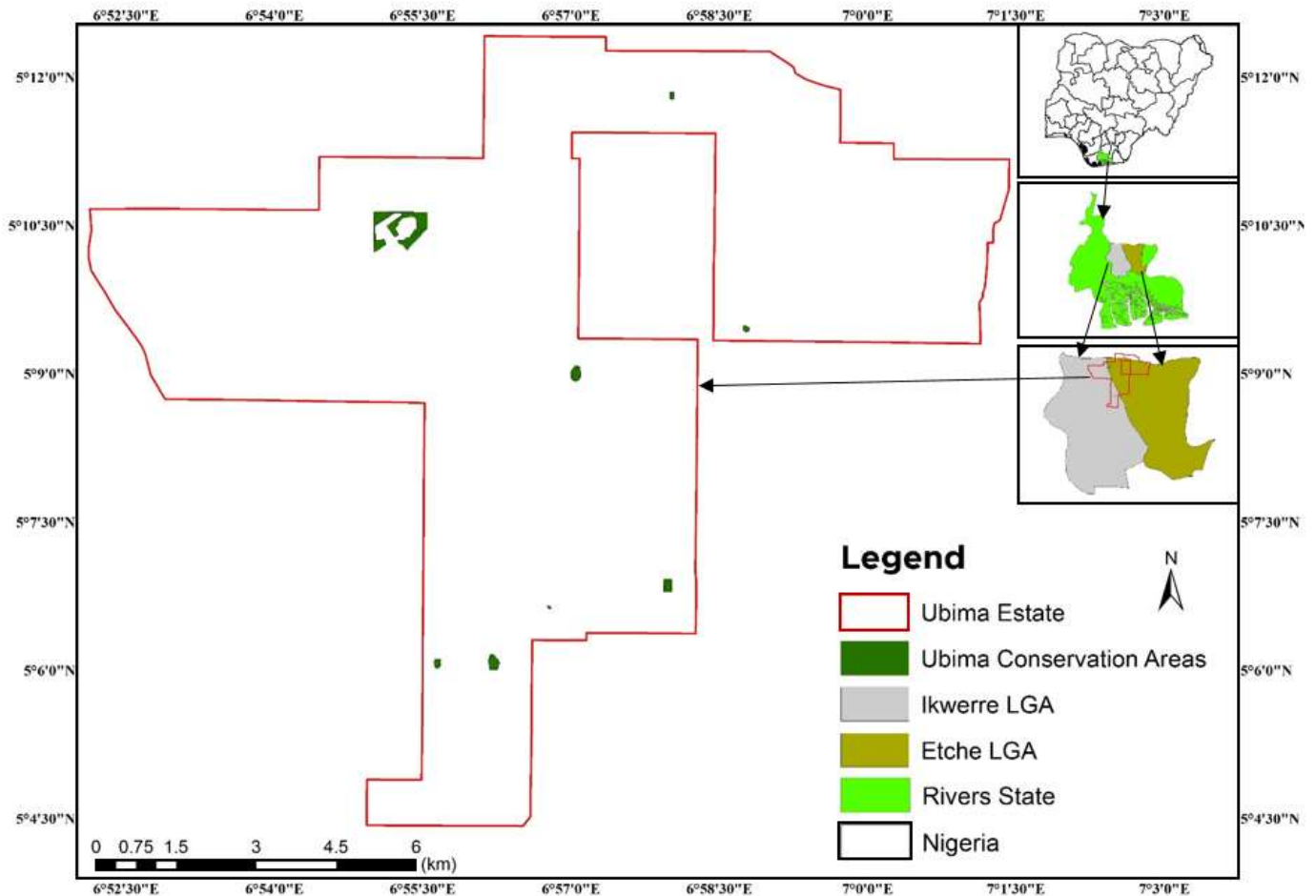


Figure 3: Map of Ubima Estate Conservation Areas

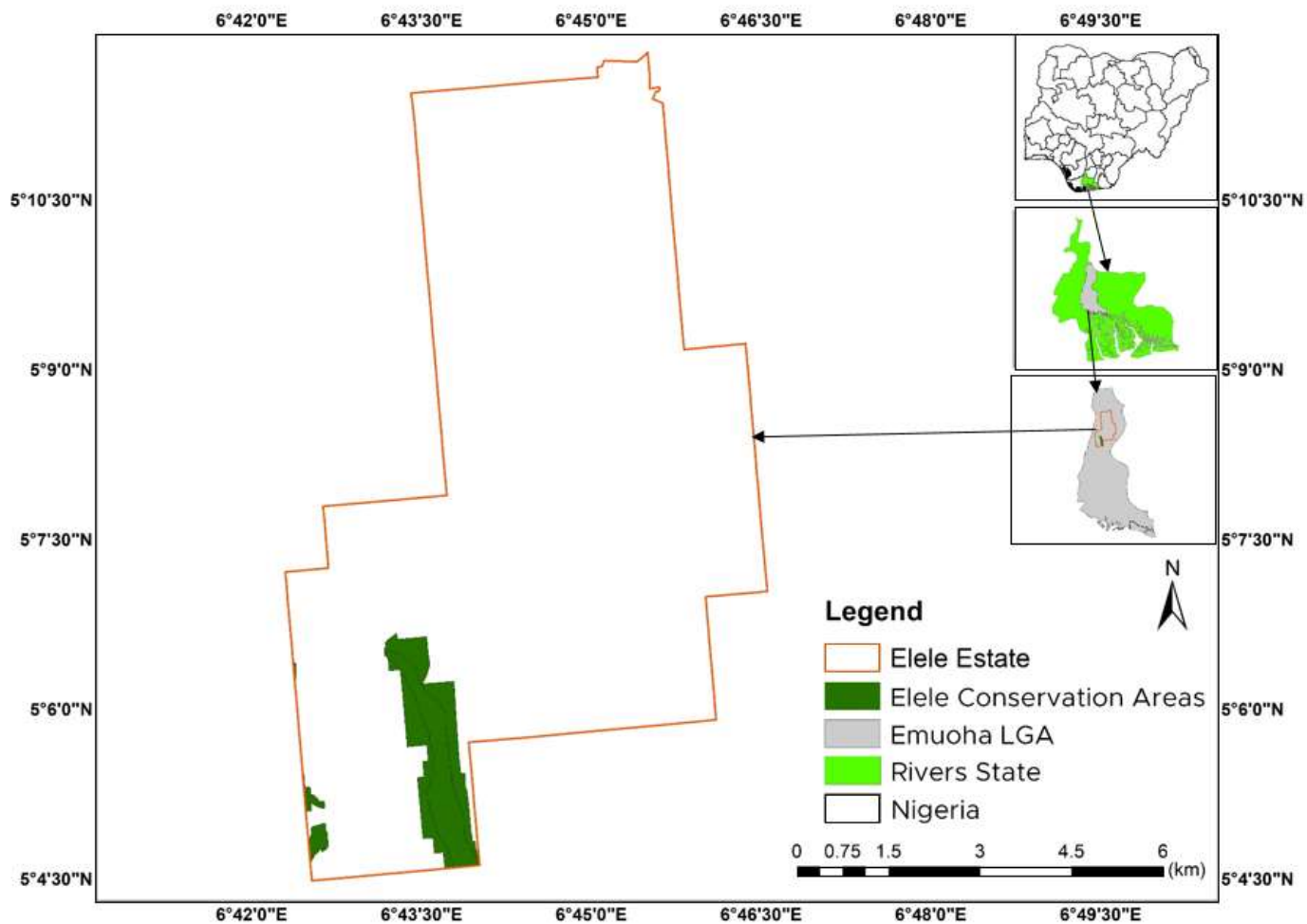


Figure 4: Map of Elele Estate Conservation Areas

3.0 METHODS AND TIMELINES

3.1 Methods

Considering the usual challenges in HCV and conservation areas management, which could make it difficult to make a clear distinction or sharp contrast between a decline in HCVs, or HCV management and/or conservation areas due to weak implementation of management strategies, and that due to (well-implemented, but) ineffective management strategies, the following activities were carried out in the course of exercise, as detailed in the subsequent sub-sections.

3.1.1 Document Review

This involved a review of the existing HCV management and/or action plans to fully understand what the company set out to achieve in terms of managing the conservation areas. To achieve this, all documents related to HCVs, including HCV reports (Proforest, 2017a for Ubima Estate and 2017b for Elele Estate), management and action plans as well as the implementation of the plans were audited. This helped to identify which parts of the action plans have or have not been implemented so far, and the current gaps or weaknesses in implementations.

3.1.2 Flora and Fauna Surveys

To ensure adequate coverage of existing land-cover types in the conservation areas at Ubima and Elele Estates, different variations in cover-types of all conservation areas were captured. Data on flora species were collected using point sampling technique. Circular plots were pre-determined using GIS technology, which involved mapping of the sample plots using available raster and vector datasets. The plots were then located on the ground for flora species identifications. Waypoints were also marked for geo-referencing of the sampled plots (Figures 5 and 6).

In each of the sample locations, flora species were identified. Special attentions were given to the occurrences of rare, threatened and endangered (RTE) flora species of global, national and local relevance. Also, successes of the new regenerations within the conservation areas were evaluated. Presence and abundance of plant species in connection with HCV 1 were recorded. Active searches were also employed for RTE flora species to capture the species that may fall outside the plots in the course of flora survey.

All flora and fauna species encountered were identified to species level by relying on professional skills, indigenous knowledge as well as plant and wildlife species identification guides including Keay (1989), Kingdon (1997), Hawthorne and Gyakuri (2006), Neuenschwander *et al.* (2011), Bown (2013), Balogun (2015), Ndiribe and Illoh (2017).

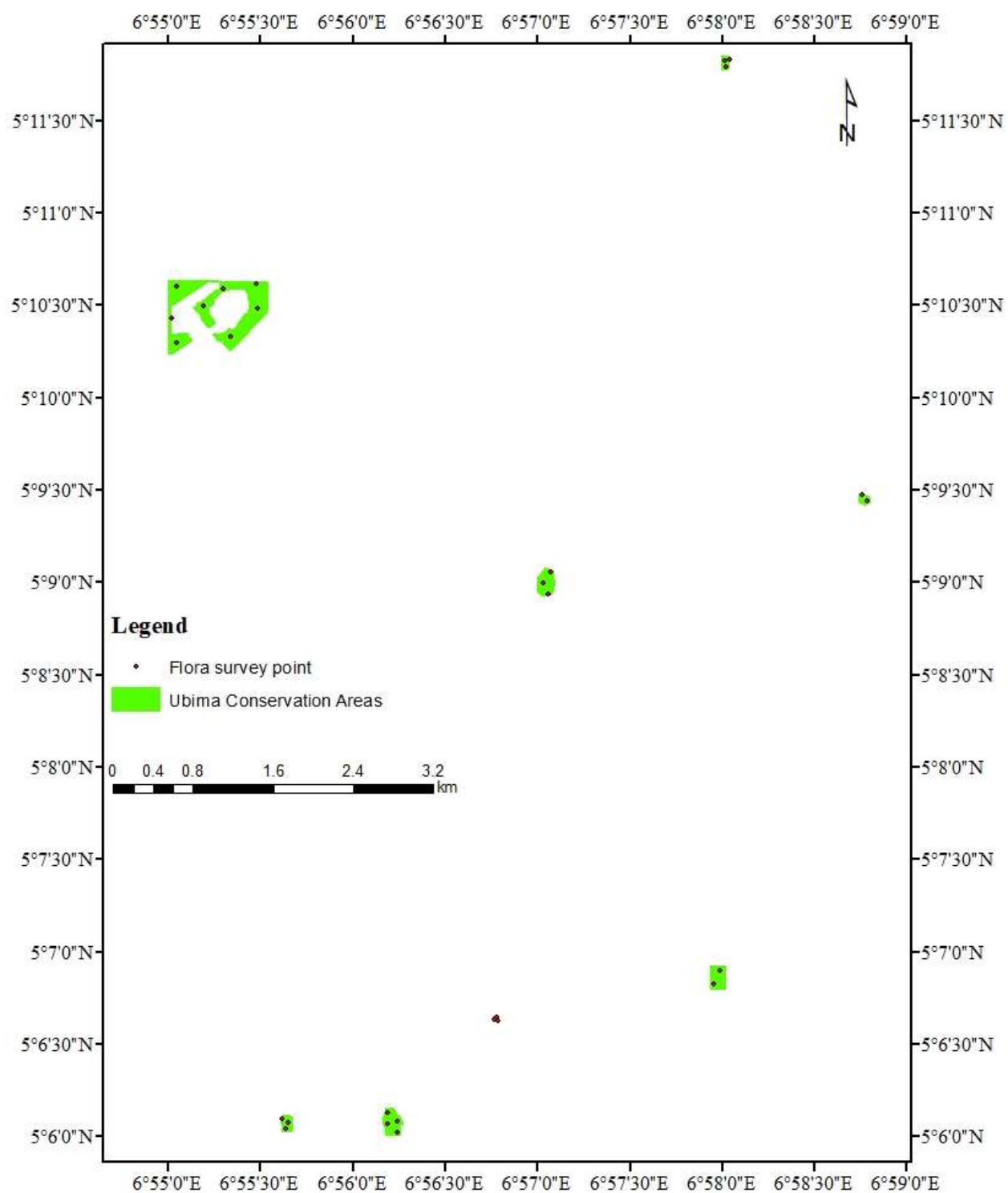


Figure 5: Map of Flora Survey Point in Ubima Conservation Areas

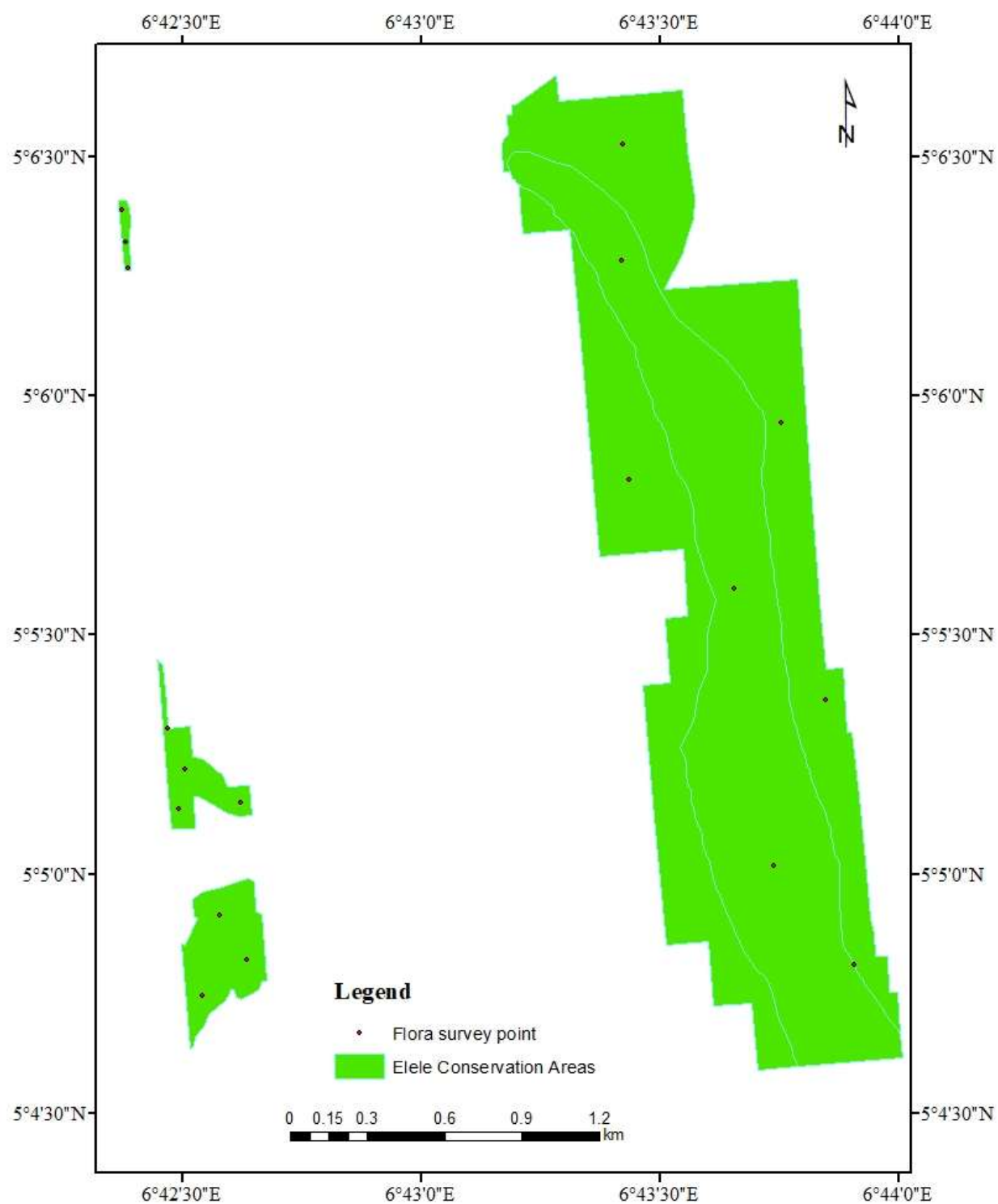


Figure 6: Map of Flora Survey Point in Elele Conservation Areas

In the case of fauna species, systematic transect walks were adopted within each of the conservation areas to identify obvious animals, especially the RTE species. The transect walks were done in slowly and quietly manners (e.g. at a speed of 1 to 1.5 kmh⁻¹) along set routes, and all sightings, calls, or signs of animals, including species, behaviours, size, age, abundance and sex, where possible, were recorded. The point counts were used to sample the presence and density of birds and primates. This involved standing at particular locations, and record sightings and calls of all observed birds and primate species over a given period of time, along with abundance and location. Transects were placed sufficiently far apart to avoid sampling the same set of individuals multiple times. Active searches were also employed for locating particular HCV 1 individuals or nest sites. Threats and disturbances to the conservation areas and HCVs were also assessed in the course of fauna surveys.

3.1.3 Monitoring of Community Values and Community Consultations

Monitoring of identified HCV 6 in the two concession was undertaken in a participatory manner, involving the host communities, to verify: whether the value is being maintained, how sustainably done; the level of reliance on the conservation areas and condition of values. Consultative meeting was held with a cross-section of the representatives of the host communities at Ubima Estate Conference Room (Plate 1). The objectives of the community engagement were to understand the dependency on and/or activities of the host communities in the conservation areas and to ascertain the social HCVs or specific conservation areas within the plantation that the local populations depend on.



Plate 1: Participants at the community consultation meeting during conservation areas monitoring exercise, expressing their views

3.1.4 Threat Assessments

This involved examination of occurrences of unauthorized activities which may be detrimental to the enhancement of the high conservation values (HCVs) as well as the existence of entire conservation areas within the two estates. All evaluations and measurements were compared to baseline information in the detailed HCV assessment reports of 2017 (Proforest, 2017a and 2017b). Evidences of logging, signs of grazing and other forms of possible illegalities within the conservation areas were investigated to assess their effects and/or potential threats to the conservation areas and the HCVs they contain.

3.2 Timelines

Following the approval of the conservation areas (CAs) and HCV monitoring proposal in November, 2022, and subsequent discussions with the local team, the monitoring exercise was conducted in the third week of December, 2022. This was followed by reporting, which spanned about four straight weeks, as detailed in Table 1.

Table 1: Monitoring timelines for conservation areas at Elele and Ubima Estates

Process steps	Main activities	Timeline (December 2022 - January 2023)			
		Wk1	Wk2	Wk3	Wk4-5
Document Review/field assessments/Community consultations	Review of HCV, EAu reports and HCV Management Plan, Flora and Fauna Surveys at Elele and Ubima Estates				
Sub-reporting	Flora and fauna reports preparation by the experts				
Preparation of Draft Report	Preparation of complete draft by lead expert				
Final Reporting	Finalization of report by lead expert				

4.0 FINDINGS

4.1 Flora and Fauna Species Diversities

Summary of the flora diversity attributes in the conservation areas of the two estates are presented in Table 2. In general, more trees were encountered per hectare in Elele Conservation Areas, especially the Creek, than in Ubima Estate. However, the largest part of the conservation areas at Ubima Estate (Management Quarters CA), C1 and C2 contain some stems of IUCN Red-listed floras such as *Albizia ferruginea*, *Allanblackia floribunda*, *Milicia excelsa*, *Terminalia ivorensis* and *T. superba*, which are also visibly seen within the management quarters. Most of the valuable tree species encountered at other Ubima Conservation Areas were also present at the Management Quarters' CA (Table 3). At the Creek CA of Elele Estate, which is essentially secondary regrowth, there are impressive concentration of valuable trees like *Allanblackia floribunda*, *Albizia ferruginea*, *Entandrophragma utile*, among others. A total of 43 and 48 tree species were identified in Ubima and Elele Conservation Areas, respectively. The most-represented flora families in the conservation areas were *Fabaceae* and *Euphorbiaceae*, respectively (Tables 3 and 4).

Table 2: Tree diversity indices for conservation areas in the two estates

Diversity attribute \ Location	Ubima CAs	Elele CAs
Species	43	48
Mean stems/ha	51	146
Dominance	0.0323	0.0627
Shannon-Wiener	3.434	3.784
Evenness	0.71	0.83
Richness	8.736	11.36
Equitability	0.652	0.8615

N.B: Dominance - degree to which a species is more numerous than its competitors in an ecological community; Evenness - how close in numbers each species is in an environment; Richness - number of different species represented in an ecological community; Equitability - extent of the representation by equal numbers of individuals of the different species of a given community

Table 3: Flora species which are present in Conservation Areas at Ubima Estate

Species	Family	IUCN	Authority
<i>Albizia ferruginea</i>	<i>Fabaceae</i>	VU	(Guill. & Perr.) Benth.
<i>Albizia zygia</i>	<i>Fabaceae</i>	NA	J.F. Macbr.
<i>Alchornea cordifolia</i>	<i>Euphorbiaceae</i>	NA	(Schumach. & Thonn.) Müll. Arg.
<i>Allanblackia floribunda</i>	<i>Clusiaceae</i>	VU	Oliv.
<i>Anthocleista djalolensis</i>	<i>Loganiaceae</i>	NA	A. Chev.
<i>Baphia nitida</i>	<i>Fabaceae</i>	LC	Lodd
<i>Bombax buonopozense</i>	<i>Malvaceae</i>	NA	P. Beauv.- FTWA, ed.2, 1:334.
<i>Bridelia micrantha</i>	<i>Phyllanthaceae</i>	LC	(Hochst.) Baill.
<i>Canarium schweinfurthii</i>	<i>Burseraceae</i>	NA	Engl.
<i>Carapa procera</i>	<i>Meliaceae</i>	LC	DC.
<i>Celtis zenkeri</i>	<i>Ulmaceae</i>	LC	Engl.
<i>Cleistopholis patens</i>	<i>Annonaceae</i>	NA	(Benth.) Engl.&Diels -FTWA, ed.2, 1:38.
<i>Cola laurifolia</i>	<i>Sterculiaceae</i>	NA	Mast.
<i>Cylicodiscus gabunensis</i>	<i>Mimosaceae</i>	NA	Harms
<i>Dacryodes edulis</i>	<i>Burseraceae</i>	NA	(G.Don) H.J. Lam
<i>Dialium guineense</i>	<i>Fabaceae</i>	NA	Willd.
<i>Discoglyprena caloneura</i>	<i>Euphorbiaceae</i>	NA	(Pax) Prain
<i>Ficus Mucoso</i>	<i>Moraceae</i>	NA	Ficalho
<i>Funtumia elastica</i>	<i>Apocynaceae</i>	NA	(Preuss) Stapf
<i>Irvingia gabonensis</i>	<i>Irvingiaceae</i>	NT	(Aubry-Lecomte ex O'Rorke) Baill.
<i>Lecaniodiscus cupanioides</i>	<i>Sapindaceae</i>	NA	Planch. ex Benth.
<i>Macaranga staudtii</i>	<i>Euphorbiaceae</i>	NA	Pax
<i>Milicia excelsa</i>	<i>Moraceae</i>	NT	(Welw.) C.C. Berg
<i>Millettia thonningii</i>	<i>Fabaceae</i>	NA	(Schumach.) Baker
<i>Mitragyna stipulosa</i>	<i>Rubiaceae</i>	VU	(DC.) Kuntze.
<i>Monodora myristica</i>	<i>Annonaceae</i>	NA	(Gaertn.) Dunal
<i>Musanga cecropioides</i>	<i>Urticaceae</i>	NA	R. Br. ex Tedlie
<i>Napoleonaea vogelii</i>	<i>Lecythidaceae</i>	NA	Hook. & Planch.

<i>Nauclea diderrichii</i>	<i>Rubiaceae</i>	VU	(De Wild.) Merr.
<i>Olax subscorpioidea</i>	<i>Olacaceae</i>	NA	Oliv.
<i>Pausinystalia johimbe</i>	<i>Rubiaceae</i>	NA	(K.Schum.) Pierre ex Beille
<i>Pentaclethra macrophylla</i>	<i>Fabaceae</i>	NA	Benth.
<i>Petersianthus macrocarpus</i>	<i>Lecythidaceae</i>	NA	(P Beauv.) Liben
<i>Piptadeniastrum africanum</i>	<i>Fabaceae</i>	NA	(Hook. f.) Brenan
<i>Pterocarpus mildbraedii</i>	<i>Fabaceae</i>	NA	Harms
<i>Pterocarpus osun</i>	<i>Papilionaceae</i>	NA	Craib
<i>Pycnanthus angolensis</i>	<i>Myristicaceae</i>	NA	(Welw.) Warb.
<i>Rauvolfia vomitoria</i>	<i>Apocynaceae</i>	NA	Afzel.
<i>Ricinodendron heudelotii</i>	<i>Euphorbiaceae</i>	NA	(Baill.) Heckel
<i>Tabaemontana pachysiphon</i>	<i>Apocynaceae</i>	LC	Stapf.
<i>Terminalia ivorensis</i>	<i>Combretaceae</i>	VU	A. Chev.
<i>Terminalia superba</i>	<i>Combretaceae</i>	NA	Engl. & Diels
<i>Trichilia monadelpha</i>	<i>Sterculaceae</i>	NA	(Thonn.) JJ de Wilde
<i>Zanthoxylum zanthoxyloides</i>	<i>Rutaceae</i>	NA	(Lam.) Zepern. & Timler

N.B: LC - least concern; NA - not assessed; NT - near threatened; VU - vulnerable

Table 4: Flora species which are present in Conservation Areas at Elele Estate

Species	Family	IUCN	Authority
<i>Albizia ferruginea</i>	<i>Fabaceae</i>	VU	(Guill. & Perr.) Benth.
<i>Alchornea cordifolia</i>	<i>Euphorbiaceae</i>	NA	(Schumach. & Thonn.) Müll. Arg.
<i>Allanblackia gabonensis</i>	<i>Clusiaceae</i>	VU	(Pellegr.) Bamps
<i>Alstonia boonie</i>	<i>Apocynaceae</i>	NA	De Wild.
<i>Anthocleista djalensis</i>	<i>Lamiaceae</i>	NA	A. Chev.
<i>Bambusa vulgaris</i>	<i>Poaceae</i>	NA	Schrad. ex J.C. Wendl.
<i>Brenania brieyi</i>	<i>Rubiaceae</i>	NA	(De Wild.) Petit.-FTWA, ed.2, 2:116.
<i>Bridelia atroviridis</i>	<i>Euphorbiaceae</i>	NA	Muell. Arg.FTWA, ed.2, 1:370
<i>Bridelia micrantha</i>	<i>Phyllanthaceae</i>	LC	(Hochst.) Baill.
<i>Calamus deerratus</i>	<i>Arecaceae</i>	LC	G.Mann & H.Wendl.
<i>Ceiba pentandra</i>	<i>Malvaceae</i>	NA	C.F. Gaertn.
<i>Cleistopholis patens</i>	<i>Annonaceae</i>	NA	(Benth.) Engl. & Diels -FTWA, ed.2, 1:38.
<i>Cola laurifolia</i>	<i>Sterculiaceae</i>	NA	Mast.
<i>Combretodendron macrocarpum</i>	<i>Lecythidaceae</i>	NA	(P.Beauv.) Keay -FTWA, ed.2, 1:761.
<i>Dialium guineense</i>	<i>Fabaceae</i>	NA	Willd.
<i>Elaeis guineensis</i>	<i>Arecaceae</i>	NA	Jacq.
<i>Entandrophragma utile</i>	<i>Meliaceae</i>	VU	(Dawe & Sprague) Sprague
<i>Erythrina vogelii</i>	<i>Fabaceae</i>	NA	Hook. f.
<i>Ficus exasperata</i>	<i>Moraceae</i>	NA	Vahl
<i>Ficus Mucoso</i>	<i>Moraceae</i>	NA	Ficalho
<i>Hallea ciliata</i>	<i>Rubiaceae</i>	NA	(Aubrév. & Pellegr.) J.-F.Leroy
<i>Hallea stipulosa</i>	<i>Rubiaceae</i>	VU	(DC.) J.-F.Leroy
<i>Harungana madagascariensis</i>	<i>Clusiaceae</i>	NA	Lam. ex Poir.
<i>Hevea brasiliensis</i>	<i>Euphorbiaceae</i>	NA	(A. Juss.) Muell. Arg.
<i>Lecanioidiscus cupanioides</i>	<i>Sapindaceae</i>	NA	Planch. ex Benth.
<i>Macaranga staudtii</i>	<i>Euphorbiaceae</i>	NA	Pax
<i>Margaritaria discoidea</i>	<i>Euphorbiaceae</i>	NA	(Baill.) G.L. Webster

<i>Mitragyna stipulosa</i>	<i>Rubiaceae</i>	VU	(DC.) Kuntze.
<i>Monodora myristica</i>	<i>Annonaceae</i>	NA	(Gaertn.) Dunal
<i>Musanga cecropioides</i>	<i>Moraceae</i>	NA	R. Br. ex Tedlie
<i>Nauclea diderrichii</i>	<i>Rubiaceae</i>	VU	(De Wild.) Merr.
<i>Newbouldia laevis</i>	<i>Bignoniaceae</i>	NA	(P. Beauv.) Seem.
<i>Ongokea gore</i>	<i>Olacaceae</i>	NA	(Hua) Pierre.
<i>Pentaclethra macrophylla</i>	<i>Fabaceae</i>	NA	Benth.
<i>Pseudospondias microcarpa</i>	<i>Anacardiaceae</i>	NA	(A.Rich.)Engl.
<i>Psidium guajava</i>	<i>Myrtaceae</i>	NA	L.
<i>Pycnanthus angolensis</i>	<i>Myristicaceae</i>	NA	(Welw.) Warb.
<i>Raphia vinifera</i>	<i>Arecaceae</i>	NA	P.Beauv.
<i>Rauvolfia vomitoria</i>	<i>Apocynaceae</i>	NA	Afzel.
<i>Ricinodendron heudelotii</i>	<i>Euphorbiaceae</i>	NA	(Baill.) Heckel
<i>Spondias mombin</i>	<i>Anacardiaceae</i>	NA	Linn.
<i>Tabernaemontana pachysiphon</i>	<i>Apocynaceae</i>	NA	Stapf.
<i>Terminalia ivorensis</i>	<i>Combretaceae</i>	VU	A. Chev.
<i>Terminalia superba</i>	<i>Combretaceae</i>	NA	Engl. & Diels
<i>Trichilia monadelpha</i>	<i>Sterculaceae</i>	NA	(Thonn.) JJ de Wilde
<i>Uapaca staudtii</i>	<i>Phyllanthaceae</i>	NA	Pax
<i>Uvariastrum elliotianum</i>	<i>Annonaceae</i>	LC	(Engl. & Diels) Sprague & Hutch
<i>Zanthoxylum zanthoxyloides</i>	<i>Rutaceae</i>	NA	(Lam.) Zepern. & Timler

N.B: LC - least concern; NA - not assessed; NT - near threatened; VU - vulnerable

The fauna compositions and relative abundance in the conservation areas at Ubima and Elele Estates are presented in annexes 1 and 2. A total of 19 bird species, 11 species of Mammals, 1 species of *Mulusca*, 1 species of Pisces and 1 species of Amphibians were identified in the in Ubima Conservation Areas (Figures 7 and 8). The wildlife species were found to be connected to oil palm plantation and secondary forest regrowth, and probably as a result of ecological succession. Details of the fauna compositions in Ubima Conservation Areas are presented in Annex 1.

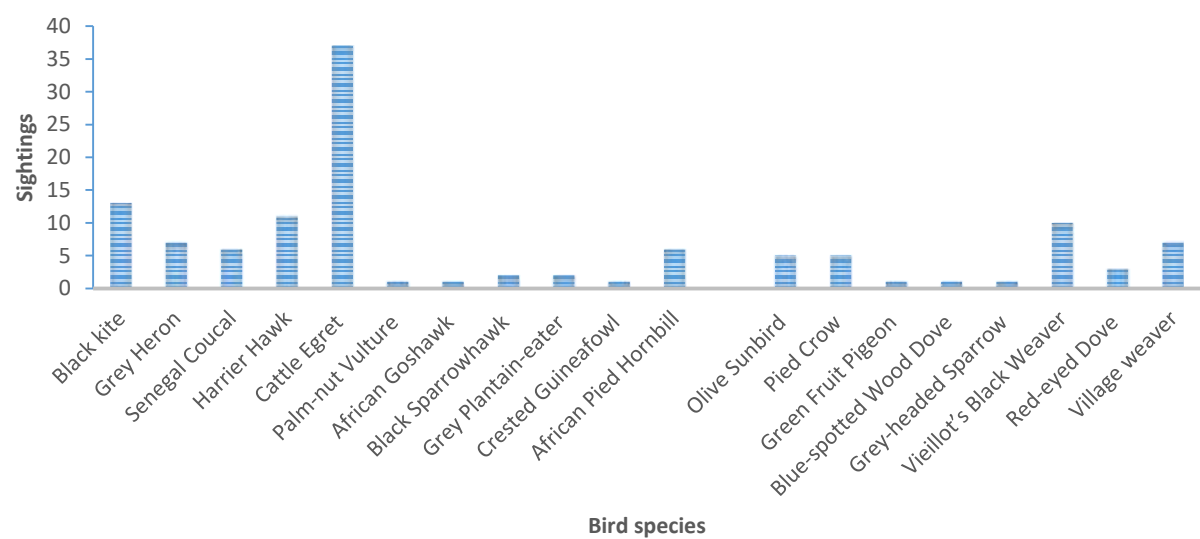


Figure 7: Distribution bird species in Ubima Conservation Area

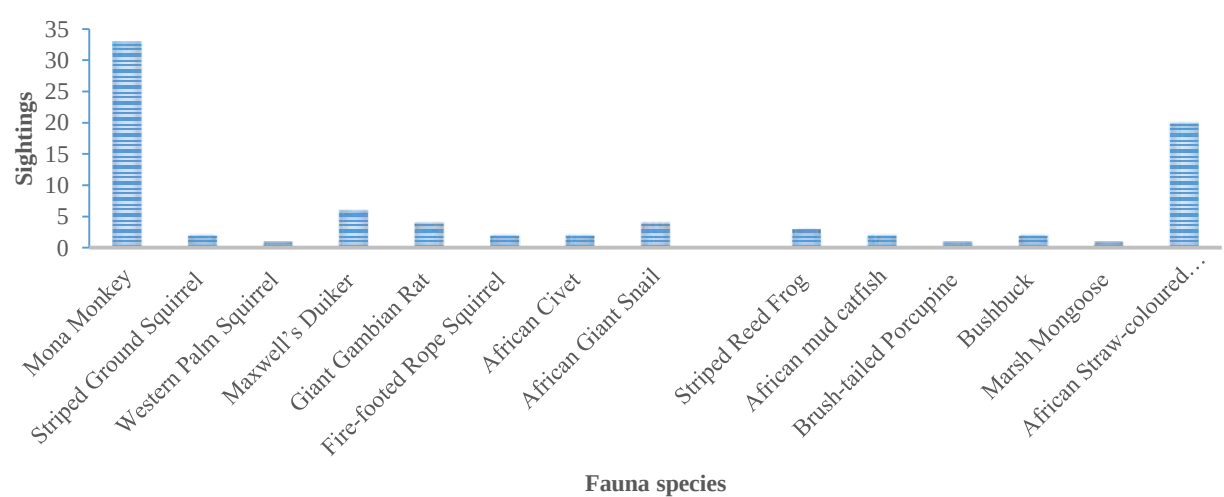


Figure 8: Distribution of other fauna species in Ubima Conservation Area

At Elele Conservation Areas, a total of 42 bird species, 15 species of Mammals, 3 species of Reptiles, 2 species of Pisces and 3 species of Amphibians were identified during the survey, constituting 65 fauna species in 44 families (Figures 9 and 10). The result showed that Elele Conservation Areas are richer in fauna species and population as is the case with flora species. This may be due to large variations in sizes and extent of the conservation areas in the two concessions, which might either expose or shield fauna species, as the case may be. Details of the relative density and sightings of individuals identified are presented in Annex 2.

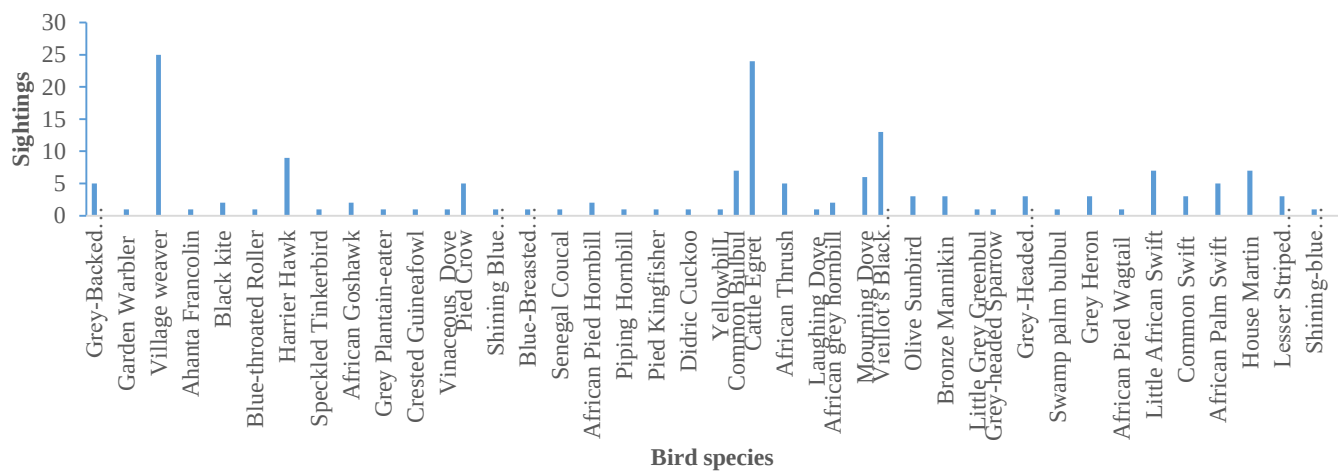


Figure 9: Distribution of bird species in Elele Conservation Area

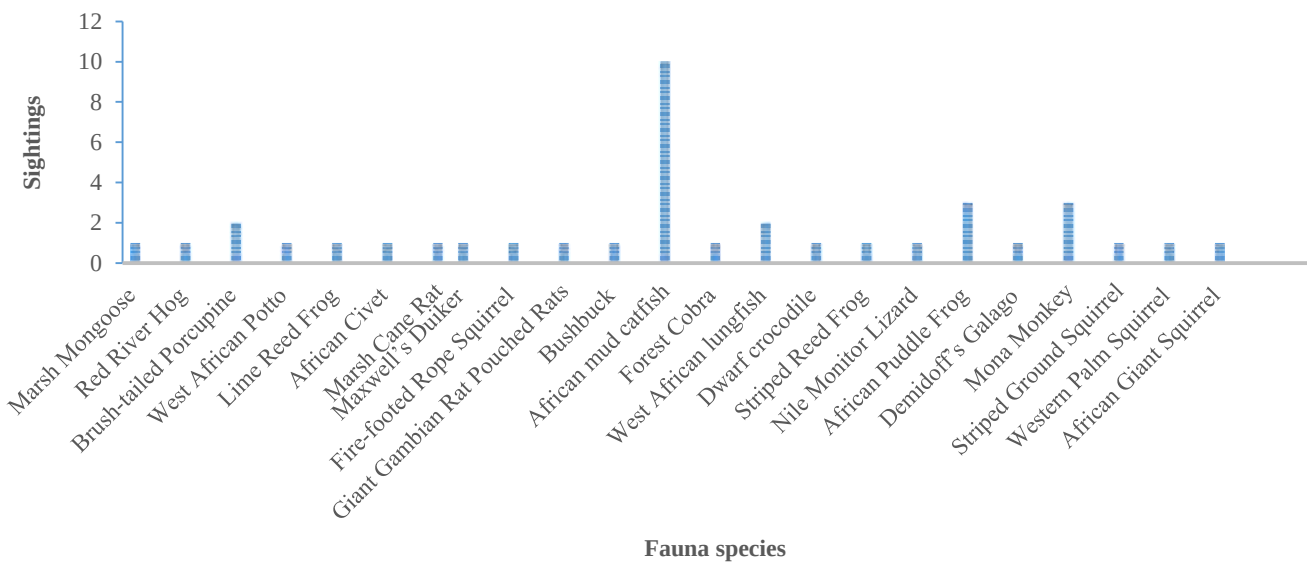


Figure 10: Distribution of other fauna species in Elele Conservation Areas

4.2 Implementations of Conservation Areas Management and Action Plans

4.2.1 Ubima Conservation Areas

The secondary forest at Management Quarters, Swamps and Wetlands as well as *Iyo*, *Okubu* and *Weyese* Shrines, previously identified as HCVs 1, 3 and 6 areas, have been clearly-mapped with distinct boundaries and signage(s) in white and red colours, as part of good conservation measures and sustainable management plan (e.g. Plate 2). The conservation areas within the estate are well-maintained as visibly seen. There were no significant disturbances conservation areas within the estate, including two of the HCV 6 (*Iyo* and *Okubu* Shrines), except in *Weyese* Shrine Conservation area, where some form of fruit crops like pawpaw, mango, plantain and coconut stems planted by a man believed to be a traditionalist from one of the host communities were observed, as shown in Plate 3. However, the farming was already ongoing as at the time of initial HCV assessment, as confirmed by the HSE team. Nevertheless, the impacts of routine monitoring and/or patrols by the Eco-guards appear to have yielded some positive results in other areas.



Plate 2: Okubu Shrine (HCV 6 Area) marked with a piece of white cloth in K5-3, Ubima Estate



Plate 3: Disturbed Weyese Shine Conservation Area at H4-1&2

4.2.2 Elele Conservation Areas

There are sufficient signage(s) to alert workers and host communities about the presence of conservation areas within the estate (e.g., as shown in Plate 4). These areas are patrolled and monitored routinely by the Eco-guards in all working days. In some part of the conservation areas, especially at the boundaries of the palm plantation fields, it appears that the efforts are yielding some results. However, Conservation Areas S1, S2 and S3 have witnessed some forms of disturbances at the inner parts. These disturbances come from neighbouring communities, who fish and hunt through trapping within the conservation areas, and also from cattle herders for grazing (Plate 5).



Plate 4: Marked Conservation Area at Elele Estate



Plate 5: Different signs of disturbances within the CAs at Elele Estate

4.3 Effectiveness of the Current Conservation Areas Management Options

4.3.1 Ubima Conservation Areas

Analyses of land-cover in the conservation areas at Ubima Estate between 2017 (when the areas were delineated following HCV assessment) and December, 2022 revealed that secondary forest cover, especially at the management quarters, *C1* and *C2* Conservation Areas improved by 1.5% (i.e., from 44.01 to 44.73 ha) as shown in Figures 11 and 12, respectively. Details of changes in conservation areas are shown in Table 5.

Table 5: Changes in land cover at Ubima Conservation Areas between 2017 and 2022

Land Cover	2017		2022	
	Area (ha)	%	Area (ha)	%
Secondary Forest	44.01	88.43	44.73	89.87
Young Regeneration/Swamp	5.76	11.57	5.04	10.13
Total	49.77	100	49.77	100

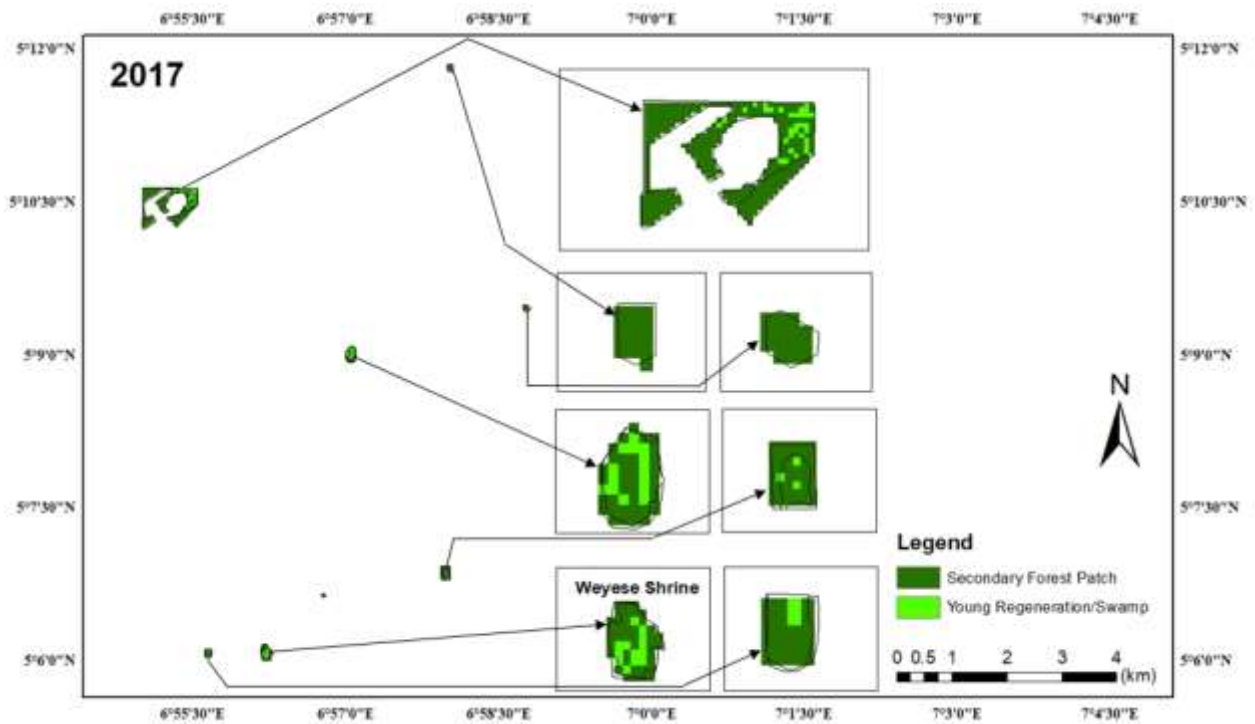


Figure 11: Land-cover map of Ubima Conservation Areas in 2017

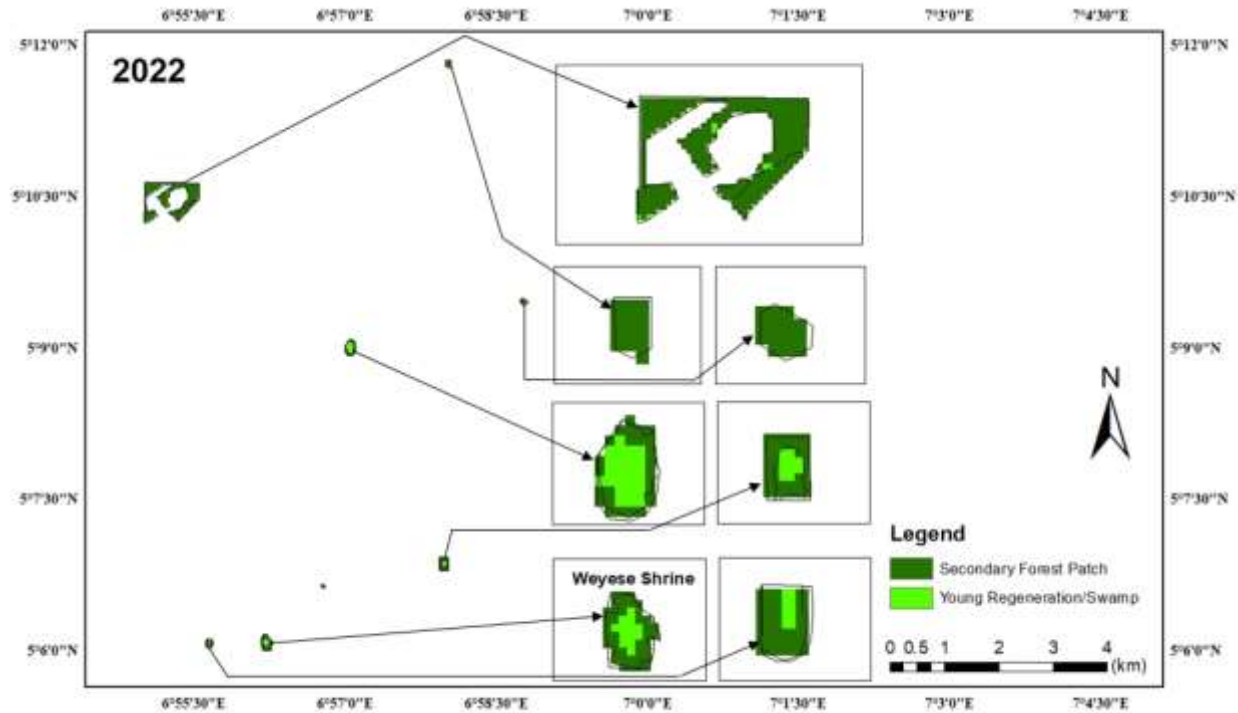


Figure 12: Land-cover map of Ubima Conservation Areas in December, 2022

4.3.2 Elele Conservation Areas

In addition to the aforementioned constant intrusions by Fulani cattle herders and disturbances from host communities in form of hunting pressure and fishing, there are worrisome signs of large-scale bunkering activities in the Creek Conservation Area, which appeared to have defied any form of effective monitoring in that axis. Although the original intension of the bunkers was to illegally siphon the nation's crude oil through one of the major trunk lines, which they steal by connecting sub-pipes along the trunk line, the residual effects were very visible on vegetation in parts of the Creek, where burning has occurred. Consequently, a substantial part of the Creek was burnt, resulting from wild fire (Plate 6), which is usually associated with illegal bunkering activities in the Niger-Delta region. This incident has exposed the conservation area to large-scale fuel-wood exploitation in the Creek Conservation Area, as many villagers were encountered in the course of monitoring activities (Plate 7).

There is no doubt that SNL has been implementing all the recommendations of the HCV reports at Elele Estate, but the implementation of those actions appeared more successful and effective in S1, S2 and S3 Conservation Areas than in the Creek, which has witnessed heavy disturbances from the people of host communities, especially *Elele-Alimini* people, who hide in the area to perpetrate illegality in form of bunkering. This portends serious danger and threat to even the intact forest areas, as these villagers may shift attentions to other areas after the burnt tree stems have been completely harvested or exhausted, if the current activities are unchecked.



Plate 6: Burnt parts of the Creek CA in connection with bunkering activities in Elele Estate



Plate 7: Fuel-wood exploitation activities by *Elele-Alimini* people in the burnt parts of the Creek

The situation at the creek in the southern part of the concession revealed a heavily disturbed forest with profound signs of illegal activities, especially bunkering with dangerously-lasting effects of widespread burning in recent time. The effects of the fire accident resulting from bunkering have

claimed about 24.8% (totaling approximately 72.18 ha) of the entire CAs in the estate, with disastrous effects on secondary freshwater swamp forest in the Creek. Although SNL has made appreciable efforts to designate and mapped this area for conservation, activities of bunkers and cattle herders remained a major challenge in keeping the areas abreast of the original intention and purpose.

It appears that the efforts of company through its Eco-guards are not yet yielding the expected positive outcome in the Creek CA. Generally, land-cover analyses in the conservation areas revealed that secondary forests (including those of the creek and the areas with pronounced old palms) shrank by 32.2% (i.e., from an estimated total of 263.72 ha in 2017 to 184.05 ha in December, 2022), losing 79.67 ha in five years, with about 72.17 ha (90.6%) of this lost to fire incident at the Creek (Figures 13 and 14). On the other hand, bareland has increased to 6.27 from 3.39% of the entire conservation areas within the period (i.e., from 9.88 ha in 2017 to 18.27 ha in December, 2022). The major drivers of these ugly trend are bunkering and illegal grazing activities within the conservation areas in Elele Estate. Details of the land-cover of the conservation areas within five years are shown in Table 6.

Table 6: Changes in land cover at Elele Conservation Areas between 2017 and 2022

Land Cover	2017		2022	
	Area (ha)	%	Area (ha)	%
Secondary Forest	143.8	49.4	131.7	45.2
Secondary Forest (with Old Palms)	119.9	41.2	52.4	18.0
Swamp Forest	13.23	4.5	13.2	4.5
Bare Land	9.9	3.4	18.3	6.3
Burnt Area	0.0	0.0	72.2	24.8
Wetland	4.4	1.5	3.5	1.2
Total	291.2	100	291.2	100

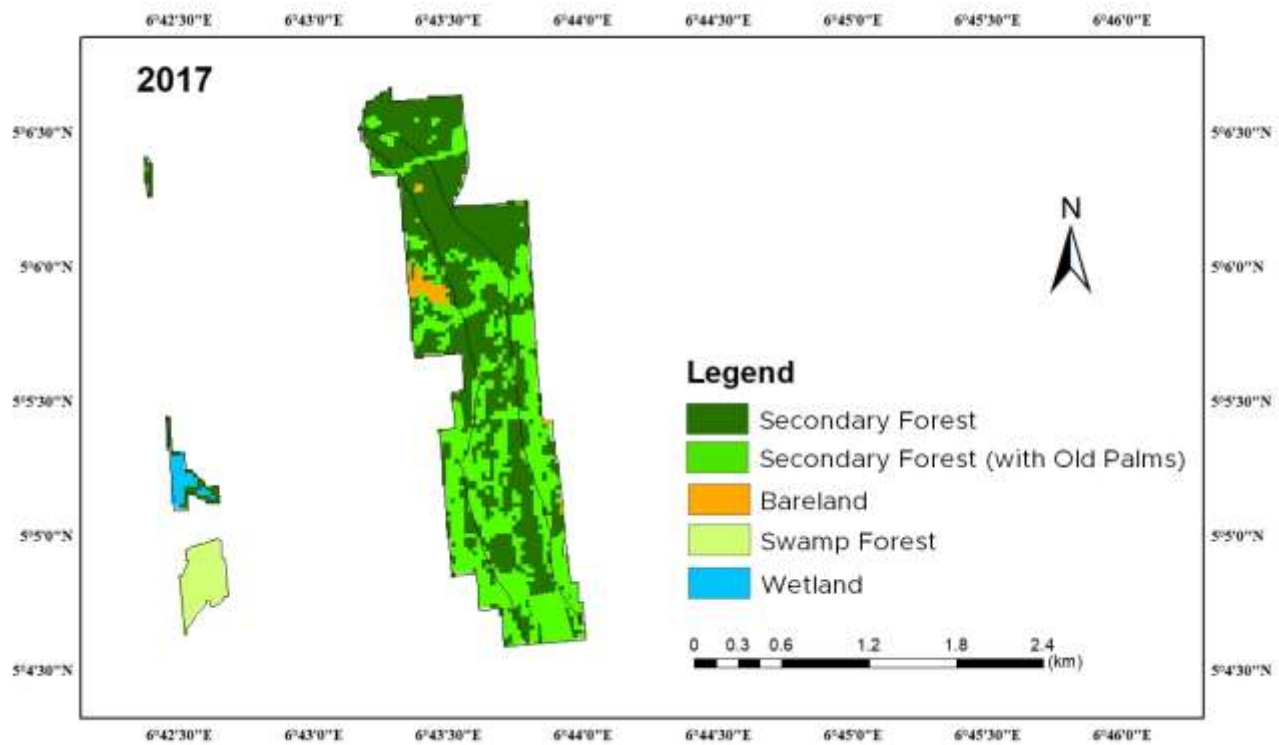


Figure 13: Land-cover map of Elele Conservation Areas in 2017

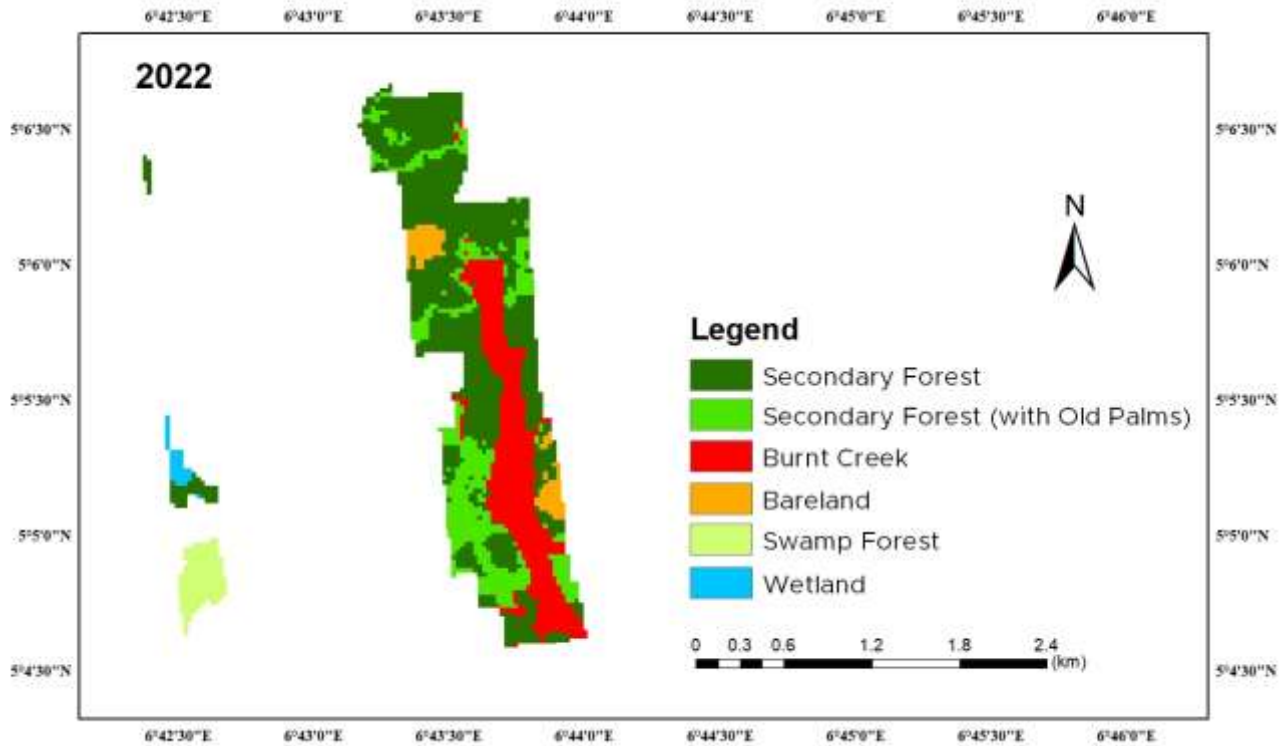


Figure 14: Land-cover map of Elele Conservation Areas in December, 2022

5.0 STATUS OF THE IDENTIFIED HCVs IN THE CONSERVATION AREAS

5.1 Ubima Conservation Areas

Three HCVs, including 1, 3 and 6 were previously identified at Ubima Estate (as contained in Proforest, 2017a), and the areas, where the HCVs were confirmed to be present have been designated as Conservation Areas by the SNL. Specifically, the attributes of the identified HCVs are summarized in Table 7. These HCVs remained fairly intact with no cause for concern, except the Weyese Conservation Area, where some sort of farming (conversion) by a traditionalist believed to be a member of one of the host communities (person suspected to come from *Omademe* village), which was already ongoing at the time of initial HCV assessment.

Table 7: Previously identified HCVs in Ubima Conservation Areas

HCV	Definition	Present	Potentially present	Absent
1	Species diversity. Concentrations of biological diversity including endemic species, and rare, threatened or endangered (RTE) species that are significant at global, regional or national levels: <i>HCV 1 habitats, including the Management Quarters Conservation Area, C1, C2, C3 and C4 containing some pockets of swamps, secondary forests and wetlands.</i>			
2	Landscape-level ecosystems and mosaics. Large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.			
3	Ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats or refugia: <i>Iyo Swamp Forest, Weyese and Okobu Wetlands.</i>			
4	Ecosystem services. Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.			
5	Community needs. Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for livelihoods, health, nutrition, water, etc...), identified through engagement with these communities or indigenous peoples.			
6	Cultural values. Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples: <i>Iyo, Okubu and Weyese Shrines.</i>			

5.2 Elele Conservation Areas

Four HCVs, including 1, 3, 4 and 6 were previously identified at Elele Estate (as detailed in Proforest, 2017b). The areas and their buffer zones, where these values were found to be present have been designated and clearly-marked as Conservation Areas by SNL. Specifically, the attributes of the identified HCVs are summarized in Table 8. These HCVs are still considered to be present in their known locations. However, they are being seriously disturbed and negatively impacted by oil bunkering, cattle grazing activities and fuel-wood collection. The most-worrisome being that of oil bunkering within the Creek, which contains a secondary freshwater swamp forest with impressive population of valuable species such as RTE flora and fauna.

Table 8: Previously identified HCVs in Elele Conservation Areas

HCV	Definition	Present	Potentially present	Absent
1	Species diversity. Concentrations of biological diversity including endemicspecies, andrare, threatenedor endangered(RTE)species that are significantat global, regional or national levels: HCV 1 habitats including the <i>Creek (freshwater swamp forest in secondary status), S1 and S2 conservation areas.</i>			
2	Intact Forest Landscapes (IFL) and landscape-level ecosystems and mosaics. Large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.			
3	Ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats or refuge: <i>The Creek and S1 (Fresh water swamps forest in the southern part of the estate), S2 and S3 (wetland) towards the south-west of the concession.</i>			
4	Ecosystem services. Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes: <i>The water bodies in the swamps of the Creek and S1, and in the wetland areas, including the Welekebe Shrine Site.</i>			
5	Community needs. Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for livelihoods, health, nutrition, water, etc.), identified through engagement with these communities or IP.			
6	Cultural values. Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with them: <i>Welekebe Shrine, which is being assumed to be present in part of the Creek within the concession (as its location within the area is unknown, and has not</i>			

been established by any of the local community to confirm that the shrine really exists). Meanwhile, there are illegal bunkering ongoing in all the places pointed to be true location of the shrine.

6.0 CURRENT THREATS TO THE CONSERVATION AREAS AND THEIR HCVS

6.1 Ubima Conservation Areas

There were no major causes for concerns in most parts of the conservation areas at Ubima Estate, probably due to the locations of the HCVs and conservation areas within oil palm plantation, which may have prevented unauthorized entries in some instances. Nevertheless, part of Weyese Shrine Conservation Area in H4-1 and H4-2 has been converted to a form of farm or orchard with pawpaw, plantain, mango littering the converted spaces (Plate 8), and C2 in K10-2, where minimal signs of dead (fallen) wood harvesting were noticed. Observations during field visits and consultations with host communities, however, confirmed that other conservation areas and the HCVs they contain were in fairly-good conditions. Details of the threats identified in Ubima Conservation Areas are presented in Table 9.



Plate 8: Conversion of part of Weyese Shrine Wetland for farming

Table 9: Current threats identified in Ubima Conservation Areas

HCV	Values present in Ubima Conservation Areas	Threats
1	Species diversity: The population of HCV 1 species, which have been listed as rare, threatened and endangered at the national level including the Mona monkey, Maxwell's duiker, Cattle egret, Grey heron, Harrier hawk, Lizard buzzard, Black sparrow hawk and African goshawk (all threatened), including those sighted during monitoring exercise and those previously identified as HCV 1.	Current threats ➤ Conversion in part of Weyese wetland for farming in form of gardening or orchard, where pawpaw, plantain mango, etc., have been planted, as observed during monitoring. ➤ Destruction of the habitats of the RTE fauna species, and loss of valuable flora.

3	Rare, threatened or endangered ecosystems: Thepocketsofswamp forests(<i>Iyo, Weyese and Okubu Shrines</i>), which are spiritual sites for the people of <i>Omademe</i> and <i>Egbu</i> Communities.	Current threats ➤ Clearance of part of vegetation, or total conversions by host communities for farming, as observed in <i>Weyese</i> CA.
6	Areas critical to local communities' traditional cultural identity: <i>Iyo, Okubu and Weyese Shrines</i>, located within the conservation areas in the estate.	Current threats ➤ The conversion of part of vegetation in <i>Weyese Shrine</i> management area, which could pose risks to the sanctity and integrity of the cultural values. ➤ Given the locations of the shrines within swamps, conversion in any of the management areas, mostly riparian, or any such activities that could cause drying or loss of water in <i>Iyo, Okubu and Weyese Shrines</i>.

6.2 Elele Conservation Areas

There have been series of disturbances in conservation areas at Elele Estate, especially the Creek CA, which also houses the *Welekebe Shrine*, where massive fuel-wood exploitations are taking place in the burnt areas of the freshwater swamp forest (Plate 9). In other conservation areas within the estate, there were pronounced signs of cattle grazing by Fulani Herders as well as hunting of fauna species through trapping. These constitute major bottleneck in the conservation areas. All the conservation areas, including *S1, S2 and S3* appeared being disturbed, with threats ranging from extensive grazing with attendant vegetation losses and soil compaction (Plate 10), hunting through trapping (Plate 11) to a total destruction of part of the Creek resulting from fire accident as a result of oil bunkering (theft) within the Creek (Plate 12). Details of the existing threats in conservation areas at Elele Estate are presented in Table 10.



Plate 9: Fuel-wood exploitations in the burnt area of the Creek at Elele Estate



Plate 10: Impactful evidences of cattle grazing at Elele Conservation Areas



Plate 11: Sign of hunting in part of the Creek Conservation Area at Elele Estate



Plate 12: Evidence of destruction by fire accident in parts of the Creek due to oil bunkering

Table 10: Current threats identified in Elele Conservation Areas

HCV	Values present in Elele Conservation Areas	Threats
1	Species diversity: Presence of population of RTE species at national level including the Dwarf crocodile, Cattle egret, Crested guinea fowl, African civet, Maxwell's duiker, and bushbuck and the Harrier hawk, Lizard buzzard, African goshawk, Black sparrowhawk, Lowe's (Mona) monkey, Kusimanse mongoose and the Red River Hog.	Current threats ➤ Extensive grazing and vegetation destruction by Fulani cattle herders as well as associated soil compactions during cattle grazing and movements within CAs, and from one CA to another, including the dry parts of the Creek Conservation Area. ➤ Hunting pressure on fauna populations including the Maxwell duiker, African civet, bushbuck and the Red River hog, which are nationally considered as RTE fauna species from external sources, especially by villagers from <i>Elele-Alimini</i> Community. ➤ Destruction of the habitats of RTE fauna and valuable flora species in the Creek caused by fire accidents in connection with crude oil theft (through bunkering) within the conservation area. ➤ Exploitation of fuel-wood in the burnt areas by the people of <i>Elele-Alimini</i> Community, but with a few fresh stems also observed to have been exploited as fuel-wood from the conservation areas.
3	Rare, threatened or endangered ecosystems: S1, S2, S3 and the Creek CAs.	Current threats ➤ Extensive grazing and vegetation destruction by Fulani cattle herders as well as associated soil compactions during cattle grazing and movements within CAs. ➤ Bunkering in the Creek and associated fire outbreak in the freshwater swamp forest with significant damaging consequences. ➤ Destruction of aquatic lives due to contamination of water bodies at the Creek resulting from bunkering activities and oil spillages.

4	Basic ecosystem services: Maintaining the hydrological and functionalities of waterbodies in the concession. Critical water catchment areas required to maintain continuous flow of water in the <i>Welekebe</i> wetland area and the Creek.	Current threats ➤ Oil bunkering and associated fire accidents, which resulted in riparian forest cover losses and destruction of habitat for adapted RTE fauna species. ➤ Water contamination and pollution from bunkering and oil spillage. ➤ Destruction of aquatic ecosystem and its organisms due to oil spillage and wild fire.
6	Areas critical to local communities' traditional cultural identity: The <i>Welekebe</i> Shrine, which is located in the freshwater swamp forest of the Creek Conservation Area within the concession.	Current threats ➤ Fire accidents resulting from bunkering activities in the Creek CA, where <i>Welekebe</i> Shrine is situated. ➤ Over exploitation of fuel-wood could denude the HCV management area of required vegetal covers.

7. ECO-GUARDS ACTIVITIES

The teams of eco-guards (currently of six personnel in total) are efficient and very active (zealous) in the field with regards to patrolling and reporting. However, while they have done fairly-well in both estates, there appears to be ineffectiveness in their operations at Elele Estate, perhaps due to limited number of personnel, as signs of encroachment, hunting through trapping and overexploitation were observed in some areas within the conservation areas at the estate. Meanwhile illegal bunkering activities constitute a major challenge in the Creek. There is limited accessibility by the eco-guards in order to effectively monitor the area and its associated HCV(s) due to the activities of the illegal operators in the Creek. Moreover, interview with the eco-guards established that the two (Ubima and Elele) teams work between Monday and Friday (Five days in a week), and between 7am and 4pm each day, while most of the unauthorized activities within the conservation areas are being carried out on Saturdays and Sundays, and in the evening of the week days. Often times, the eco-guards confirmed to have faced some threats from the host communities members, who were bent on exploiting resources in the conservation areas, and since the teams are not armed, it becomes very difficult to achieve desired results in some dangerous parts of the conservation areas, especially the Creek, where there have been consistent illegal bunkering. These actors are known to be very dangerous in the region and at national level. Hence, it is extremely difficult, if not impossible, to tackle the challenges of illegal bunkering activities except by external interventions at state and national levels.

8. MANAGEMENT RECOMMENDATIONS

Table 11 presents some recommendations for managing the conservation areas and the HCVs they house or contain at Ubima and Elele Estates.

Table 11: Conservation areas and HCVs management recommendations for the two estates

HCV	Threats	Affected Estate	Recommendations
1	Over-hunting of RTE fauna species.	➤ Creek CA, the freshwater swamp forest as well as S1, S2 and S3 Conservation Areas at Elele Estate.	Conservation education and result-oriented engagement with people of <i>Elele-Alimini</i> Community, intensified regular patrols by eco-guards and focused monitoring in all conservation areas, especially the most negatively-impacted parts at Elele Estate.
	Over-exploitation of Fuel-wood and NTFPs extractions.	➤ The Freshwater swamp forest (Creek CA) at Elele Estate.	Regular patrols to cover all parts of Elele CAs, and increased number of eco-guards at the conservation areas, considering the intensity and frequency of illegal activities in the Creek and other CAs within the estate.
	Over-grazing by Fulani cattle herders.	➤ The Creek CA (the freshwater swamp forest) as well as S1, S2 and S3 at Elele Estate.	The cattle herders should be forced to leave to avoid further loss of valuable species and eventual destruction of habitats for RTE fauna species. Efforts of eco-guards should be complemented by security personnel for effectiveness, and to achieve desired results in the nearest future since the situation at Elele Estate already appears overwhelming for the limited number of eco-guards on rotational duties.
3	Destruction of wildlife habitats and dislodgement of fauna species in the course of grazing, bunkering and conversion by host communities.	➤ The Creek, S1, S2 and S3 Conservation Area at Elele Estate; ➤ Weyese Shrine CA at Ubima Estate	Since bunkering in the Niger-Delta region is a national security issue, SNL should explore the possibilities of reporting the situation at the Creek of Elele Estate to appropriate national authorities in order to help in addressing this great concern, for the responsible authorities to include the area in the locations around the pipelines for immediate security attention. This may be necessary since curtailing such dangerous activities is obviously beyond the capability of the eco-guards, who would only operate within their duty working hours, and in week days, and unarmed. Besides, issues of bunkering may transcend any local solution at the plantation level.

			SNL should consider rehabilitating all the affected conservation areas, where conversion and over-grazing have taken place in <i>Weyese Shrine CA</i> of Ubima and in parts of the Creek and other CAs at Elele Estate through artificial regeneration using indigenous species that are native to, and would do well in the affected conservation areas.
4	Water pollution due to spillage from bunkering activities, and destruction of aquatic ecosystem.	➤ Elele Creek	Direct engagement with the local actors and their leaders/chiefs to address issue of bunkering in the Creek. SNL may also explore the possibilities of reporting the bunkering at the Creek of Elele Estate to the appropriate authorities in order to help in addressing the concern, and for possible inclusion as part of the locations for immediate actions by the Federal Government through the concerned authorities. The bunkering activities is the highest threat to the CA at Elele Estate, where the pipeline goes through the HCV. The crude oil plunder from the pipeline has contaminated the water of the Creek, and has destroyed over 60 ha of the CA, when it started to burn by fire in connection with bunkering. This illegal activity is beyond SNL control, and requests external supports from the crude oil company (Shell and its sub-contractors) as well as the national authorities (NNPC) and security agencies. SNL could also explore the use of innovative solutions to help preventing the risk, for instance, 24/7 satellite surveillance, drone, cameras, contract with the community, among others effective approaches.
6	Conversion of <i>Weyese Shrine Management Area</i> at Ubima Estate and Destruction of <i>Welekebe Shrine</i>	➤ Ubima CA and Elele Creek	Continued collaborations and engagement with the host communities on the importance of maintaining HCV and Conservation Areas. This would enable host communities to be involved

by fire at Elele Estate.	in proper management of the HCV 6 areas at Ubima and Elele Estates.
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9. SUGGESTED ACTIONS FOR THE CONSERVATION AREAS AND HCVS

Table 12 presents some suggested actions, which could help in the management of conservation areas and their HCVs in Ubima and Elele Estates.

Table 12: Some suggested management actions for the conservation areas and their HCVs

Objective	Estate	Action required	Suggested timeline
1. Protecting the integrity of the secondary forest at the Management Quarters, C1, C2, C3 as well as <i>Iyo</i> , <i>Okubu</i> and <i>Weyese</i> Conservation Areas in Ubima Estate and prevent all possible forms of conversion in the CAs.	Ubima Estate	Educate host communities on the importance of conservation, and its significance to the company's certification schemes, especially the RSPO P&C.	Periodically, as possible and realistic, based on availability of resources (at least twice a year).
		Sensitize all staff and contractors about the company's position on conservation, and the locations of all the conservation areas, as designated within the estate, as well as the important RTE fauna species they contain.	Periodically (at least twice a year).
		Rehabilitation of vegetation in <i>Weyese</i> wetland, where conversion had occurred.	July, 2024.
2. Stop bunkering and cattle grazing in the Creek and other conservation areas, especially S2.	Elele Estate	Serious continuous community engagements and stakeholder consultations to identify the perpetrators of bunkering activities in the Creek (freshwater swamp forest).	Continuous, with constant necessary modifications or adjustments, based on prevailing realities and circumstances.
		Illegal bunkering activities should be brought to the attention of the authorities responsible for combatting crude oil theft. And evidence of such should be kept by SNL.	Constantly, as signs and potentials are noticed.
		Devising other possible means of community involvement, ensuring that the local chiefs are well-consulted to find the	Periodically, and as often as necessary and possible.

		lasting solution to the problem of bunkering. In collaboration with the eco-guards, security personnel should be detailed in routine patrols across the conservation areas, especially the Creek.	
3. Stop hunting and over-exploitation of fuel-wood and other NTFPs.	Elele Estate	Sensitization of the communities and increased number of patrols. Increasing number of signages. Maintenances of trenches and gates to avoid intrusion.	Subject to financial abilities of the company and other considerations, as may be determined from time to time.
4. Protection of all wetlands and swamps from clearance, conversion and destruction.	Ubima Estate	Specific instructions indicating the exact areas to be cleared given to the operators and/or contractors, in case of re-planting in areas close to the CAs at Ubima Estate.	During land preparation for re-planting.
5. Maintaining good water quality in the Creek, Swamps and wetlands as well as preventing further contamination of the aquatic ecosystems.	Elele Estate	Monitoring of water quality through laboratory analyses. Regular engagements with the grass-root villagers, especially the low-income earners, whose livelihoods appeared to be dependents on the resources in conservation areas, particularly the <i>Elele-Alimini</i> dwellers. Educate host communities on control and prevention of water pollution.	Quarterly. Continuous (periodically). As many times as possible until there are attitudinal changes (at least quarterly). Quarterly, continuous (periodically).
6. Protection of all shrines (HCV 6 areas).	Ubima and Elele Estates	Engage well-intended host communities in familiarization tour and joint monitoring.	As deemed necessary and possible at the discretion of SNL management.
7. Recruitments or redeployments of more abled men or personnel to be part of the Eco-guard team.	Ubima and Elele Estates	On-the-job trainings including security tactics and intelligence gathering, involving trained security personnel to give some robust security trainings to eco-guards.	Periodically, based on the availability of resources and financial realities to the extent not inimical to the growth of the company and beneficial to sustainability.

10. CONCLUSION

The findings in the course of monitoring exercise showed that serious actions to maintain and enhance the HCVs and conservation areas are in effect within the two oil palm estates through the deliberate efforts of the management. At Ubima Estate, things appear to look good, as evidences revealed that efforts towards management of the conservation areas and their associated HCVs are largely yielding desired results. Meanwhile conservation areas at Elele Estate appeared to have been faced with different forms of threats arising from unauthorized activities, which in most cases overwhelmingly transcend the capability and efficiency of the unarmed eco-guards. Notable among the prevailing and dangerous threats are illegal bunkering that has resulted in contamination of water bodies at the Creek, destruction of associated aquatic lives and incident of wildfire, causing outright destruction of over 60 hectares of the creek conservation area; fuel-wood exploitation and cattle grazing by Fulani cattle herders, even in the dry parts of the creek extension.

It is, however, worthy of noting that illegal bunkering is a national issue with associated security challenge as well as political undertone, and it is well beyond SNL control and management. Nevertheless, SNL management could explore the possibility of using innovative solutions to help preventing the risks, including but not limited to 24/7 satellite surveillance, use of drone, cameras, contract with the community, among others, based on economic reality and other management considerations. To achieve a good result, consistent community education and enlightenment on the potential danger of bunkering may also play a role. Besides, there is an urgent need to consider increasing the size and number of personnel in the eco-guard teams while also ensuring a great improvement in the skills of the existing personnel, through adoption of modern techniques.

Meanwhile, it is valuable to consider possible inclusion or involvement of the SNL security personnel to complement the efforts of eco-guards during patrol, and at off-hours, when the eco-guards must have closed for the day, and during the weekends (Saturday/Sunday), when eco-guard personnel are off-duty, at Elele Estate in particular. Cattle herders should be put in check in the conservation areas to minimize species diversity losses and degradation. There should be continual community engagements at Elele Estate in order to forestall further destruction in the Creek and other conservation areas.

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12. FAUNA COMPOSITION

Annex 1: Fauna composition in Ubima Conservation Areas in December, 2022

SN	Common Name	Scientific Name	Authority	Sighting	RD (%)	IUCN	WCMC	Degree 11
1	Black kite	Accipitridae <i>Milvus migrans</i>	Boddaert, 1783	13	6.40	LC	1	-
2	Grey Heron	Ardeidae <i>Ardea cinerea</i>	Linnaeus, 1758	7	3.45	LC	1	-
3	Senegal Coucal	Cuculidae <i>Centropus senegalensis</i>	Linnaeus, 1766	6	2.96	LC	1	-
4	Harrier Hawk	Accipitridae <i>Polyboroides radiates</i>	Scopoli, 1786	11	5.42	LC	1	-
5	Mona Monkey	Cercopithecidae <i>Cercopithecus mona</i>	Schreber, 1775	33	16.26	NT	1	-
6	Striped Ground Squirrel	Sciuridae <i>Xerus erythropus</i>	Geoffroy, 1803	2	0.99	LC	1	-
7	Western Palm Squirrel	Sciuridae <i>Epixerus ebii</i>	Temminck, 1853	1	0.49	LC	1	-
8	Cattle Egret	Ardeidae <i>Bubulcus ibis</i>	Linnaeus, 1758	37	18.23	LC	1	-
9	Palm-nut Vulture	Accipitridae <i>Gypohierax angolensis</i>	Gmelin, 1788	1	0.49	LC	1	-
10	African Goshawk	Accipitridae <i>Accipiter tachiro</i>	Daudin, 1800	1	0.49	LC	1	-
11	Black Sparrowhawk	Accipitridae <i>Accipiter melanoleucus</i>	Smith, 1830	2	0.99	LC	1	-
12	Grey Plantain-eater	Musophagidae <i>Crinifer piscator</i>	Boddaert, 1783)	2	0.99	LC	1	-
13	Crested Guineafowl	Numididae <i>Guttera pucherani</i>	Hartlaub, 1860	1	0.49	LC	1	-
14	Maxwell's Duiker	Bovidae <i>Cephalophus maxwelli</i>	Smith, 1827	6	2.96	LC	1	-
4	Giant Gambian Rat	Muridae <i>Cricetomys gambiensis</i>	Waterhouse, 1840		1.97	LC	1	-
16	Fire-footed Rope Squirrel	Sciuridae. <i>Funisciurus pyrropus</i>	Cuvier, 1833	2	0.99	LC	1	-
17	African Civet	Viverridae <i>Civettictis civetta</i>	Schreber, 1776	2	0.99	LC	1	-

18	African Pied Hornbill	Bucorvidae <i>Tockus fasciatus</i>	Shaw G, 1812	6				
					2.96	LC	1	-
19	Olive Sunbird	Nectariniidae <i>Nectarinia olivacea</i>	Smith, 1840	5				
					2.46	LC	1	-
20	African Giant Snail	Achatinidae <i>Lissachatina fulica</i>	Bowdich, 1822	4				
					1.97	NE	1	-
21	Pied Crow	Corvidae <i>Corvus albus</i>	Müller, 1776	5				
					2.46	LC	1	-
22	Green Fruit Pigeon	Columbidae <i>Treron calvus</i>	Temminck, 1811	1				
					0.49	LC	1	-
23	Blue-spotted Wood Dove	Columbidae <i>Turtur afer</i>	Linnaeus, 1766	1				
					0.49	LC	1	-
24	Striped Reed Frog	Hyperoliidae <i>Afrixalus dorsalis</i>	Peters, 1875	3				
					1.48	LC	1	-
25	African mud catfish	Clariidae <i>Clarias gariepinus</i>	Burchell, 1822	2				
					0.99	LC	1	-
26	Grey-headed Sparrow	Passeridae <i>Passer griseus</i>	Vieillot, 1817	1				
					0.49	LC	1	-
27	Vieillot's Black Weaver	Ploceidae <i>Ploceus nigerrimus</i>	Vieillot, 1819	10				
					4.93	LC	1	-
28	Red-eyed Dove	Columbidae <i>Streptopelia decipens</i>	Hartlaub & Finsch, 1870	3				
					1.48	LC	1	-
29	Brush-tailed Porcupine	Hystriidae <i>Antherurus africanus</i>	Gray, 1842	1				
					0.49	LC	1	-
30	Bushbuck	Bovidae <i>Tragelaphus scriptus</i>	Pallas, 1766	2				
					0.99	LC	1	-
31	Marsh Mongoose	Herpestidae <i>Atilax paludinosus</i>	Cuvier, 1829	1				
					0.49	LC	1	-
32	Village weaver	Ploceidae <i>Ploceus cucullatus</i>	Muller, 1776	7				
					3.45	LC	1	-
33	African Straw-coloured fruit-bat	Pteropodidae <i>Eidolon helvum</i>	Kerr, 1792	20				
					9.85	NT	1	-

Annex 2: Fauna composition in Elele Conservation Areas in December, 2022

SN	Common name	Scientific name	Authority	Sightings	RD (%)	IUCN	WCMC	Degree 11
1	Grey-Backed Camaroptera	Cisticolidae <i>Camaroptera brachyura</i>	Vieillot, 1821	5		LC		-
					2.48		1	
2	Garden Warbler	Sylviidae <i>Sylvia borin</i>	Boddaert, 1783	1		LC		-
					0.49		1	
3	Village weaver	Ploceidae <i>Ploceus cucullatus</i>	Muller, 1776	25		LC		-
					12.38		1	
4	Ahanta Francolin	Phasianidae <i>Francolinus ahantensis</i>	Temminck, 1851	1		LC		-
					0.49		1	
5	Black kite	Accipitridae <i>Milvus migrans</i>	Boddaert, 1783	2		LC		-
					0.99		1	
6	Blue-throated Roller	Coraciidae <i>Eurystomus gularis</i>	Vieillot, 1819	1		LC		-
					0.49		1	
7	Harrier Hawk	Accipitridae <i>Polyboroides radiates</i>	Smith, 1829	9		LC		-
					4.46		1	
8	Speckled Tinkerbird	Lybiidae <i>Pogoniulus scolopaceus</i>	Bonaparte, 1850	1		LC		-
					0.49		1	
9	African Goshawk	Accipitridae <i>Accipiter tachiro</i>	Daudin, 1800	2		LC		-
					0.99		1	
10	Grey Plantain- eater	Musophagidae <i>Crinifer piscator</i>	Boddaert, 1783	1		LC		-
					0.49		1	
11	Crested Guineafowl	Numididae <i>Guttera pucherani</i>	Hartlaub, 1860	1		LC		-
					0.49		1	
12	Vinaceous Dove	Columbidae <i>Streptopelia vinacea</i>	Gmelin, 1789	1		LC		-
					0.49		1	
13	Pied Crow	Corvidae <i>Corvus albus</i>	Müller, 1776	5		LC		-
					2.48		1	
14	Shining Blue Kingfisher	Alcedinidae <i>Alcedo quadribrachys</i>	Bonaparte, 1850	1		LC		-
					0.49		1	
15	Blue-Breasted Kingfisher	Alcedinidae <i>Halcyon malimbica</i>	Shaw G, 1812	1		LC		-
					0.49		1	
16	Senegal Coucal	Cuculidae <i>Centropus senegalensis</i>	Linnaeus, 1766	1		LC		-
					0.49		1	
17	African Pied Hornbill	Bucerotiformes <i>Tockus fasciatus</i>	Shaw G, 1812	2		LC		-
					0.99		1	

								-
18	Piping Hornbill	Bucerotiformes <i>Ceratogymna fistulator</i>	Cassin, 1852	1	0.49	LC		-
19	Pied Kingfisher	Alcedinidae <i>Ceryle rudis</i>	Linnaeus, 1758	1	0.49	LC	1	-
20	Didric Cuckoo	Cuculidae <i>Chrysococcyx caprius</i>	Boddaert, 1783	1	0.49	LC	1	-
21	Yellowbill	Cuculidae <i>Ceuthmochares aereus</i>	Vieillot, 1817	1	0.49	LC	1	-
22	Common Bulbul	Pycnonotidae <i>Pycnonotus barbatus</i>	Desfontaines, 1789	7		LC		-
23	Cattle Egret	Ardeidae <i>Bubulcus ibis</i>	Linnaeus, 1758	24		LC	1	-
24	African Thrush	Turdidae <i>Turdus pelios</i>	Bonaparte, 1850	5		LC	1	-
25	Laughing Dove	Columbidae <i>Streptopelia senegalensis</i>	Linnaeus, 1766	1		LC	1	-
26	African grey hornbill	Bucerotidae <i>Tockus nasutus</i>	Linnaeus, 1766	2		LC	1	-
27	Mourning Dove	Columbidae <i>Streptopelia decipiens</i>	Hartlaub & Finsch, 1870	6		LC	1	-
28	Striped Ground Squirrel	Sciuridae <i>Xerus erythropus</i>	Geoffroy, 1803	1		LC	1	-
29	Western Palm Squirrel	Sciuridae <i>Epixerus ebii</i>	Temminck, 1853	1		LC	1	-
30	African Giant Squirrel	Sciuridae <i>Protoxerus stangeri</i>	Waterhouse, 1842	1		LC	1	-
31	Vieillot's Black Weaver	Ploceidae <i>Ploceus nigerrimus</i>	Vieillot, 1819	13		LC	1	-
32	Olive Sunbird	Nectariniidae <i>Nectarinia olivacea</i>	Smith, 1840	3		LC	1	-
33	Bronze Mannikin	Estrildidae <i>Spermestes cucullatus</i>	Swainson, 1837	3		LC	1	-
34	Little Grey Greenbul	Pycnonotidae <i>Andropadus gracilis</i>	Cabanis, 1818	1		LC	1	-

35	Grey-headed Sparrow	Passeridae <i>Passer griseus</i>	Vieillot, 1817	1	0.49	LC		
							1	-
36	Grey-Headed Negrofinch	Estrildidae <i>Nigrita canicapillus</i>	Strickland, 1841	3	1.49	LC		-
							1	-
37	Mona Monkey	Cercopithecidae <i>Cercopithecus mona</i>	Schreber, 1775	3	1.49	NT		
							1	-
38	Swamp palm bulbul	Pycnonotidae <i>Thesolocichla leucopleurus</i>	Cassin, 1855	1		LC		-
					0.49		1	
39	Grey Heron	Ardeidae <i>Ardea cinerea</i>	Linnaeus, 1758	3		LC		
					1.49		1	-
40	African Pied Wagtail	Motacillidae <i>Motacilla aguimp</i>	Linnaeus, 1758	1		LC		-
					0.49		1	-
41	Little African Swift	Apodidae <i>Apus affinus</i>	Gray, 1830	7		LC		
					3.47		1	-
42	Common Swift	Apodidae <i>Apus apus</i>	Linnaeus, 1758	3		LC		-
					1.49		1	-
43	African Palm Swift	Apodidae <i>Cypsiurus parvus</i>	Lichtenstein, 1823	5		LC		
					2.48		1	-
44	House Martin	Hirundinidae <i>Delichon urbicum</i>	Linnaeus, 1758	7		LC		-
					3.47		1	-
45	Lesser Striped Swallow	Hirundinidae <i>Hirundo abyssinica</i>	Linnaeus, 1758	3		LC		
					1.49		1	-
46	Demidoff's Galago	Galagidae <i>Galagoides demidovii</i>	de Poursarques, 1893	1		LC		-
					0.49		1	-
47	Shining-blue kingfisher	Alcedinidae <i>Alcedo quadribachy's</i>	Bonaparte, 1850	1		LC		
					0.49		1	-
48	African mud catfish	Clariidae <i>Clarias gariepinus</i>	Burchell, 1822	10		LC		-
					4.95		1	-
49	Forest Cobra	Elapidae <i>Naja melanoleuca</i>	Hallowell, 1857	1		LC		
					0.49		1	-
50	West African lungfish	Protopteridae <i>Protopterus annectens</i>	Owen, 1839	2		LC		-
					0.99		1	-
51	Dwarf crocodile	Crocodylidae <i>Osteolaemus tetraspis</i>	Cope, 1861	1		VU		
					0.49		1	-
52	Striped Reed Frog	Hyperoliidae <i>Afrixalus dorsalis</i>	Peters, 1875	1		LC		-
					0.49		1	-

53	Nile Monitor Lizard	Varanidae <i>Varanus niloticus</i>	Linnaeus, 1766	1		LC		
					0.49		1	-
54	African Puddle Frog	Phrynobatrachidae <i>Phrynobatrachus</i> sp	FitzSimons, 1932	3		LC		-
					1.49		1	
55	Marsh Mongoose	Herpestidae <i>Atilax paludinosus</i>	Cuvier, 1826	1		LC		
					0.49		1	-
56	Red River Hog	Suidae <i>Potamochoerus porcus</i>	Linnaeus, 1758	1		LC		-
					0.49		1	
57	Brush-tailed Porcupine	Hystriidae <i>Antherurus africanus</i>	Gray, 1842	2		LC		
					0.99		1	-
58	West African Potto	Lorisidae <i>Perodicticus potto</i>	Muller, 1766	1	0.49	NT	1	-
59	Lime Reed Frog	Hyperoliidae <i>Hyperolius fusciventris</i>	Peters, 1876	1	0.49	LC		
							1	-
60	African Civet	Viverridae <i>Civettictis civetta</i>	Schreber, 1776	1	0.49	LC	1	-
61	Marsh Cane Rat	Thryonomyidae <i>Thryonomys swinderianus</i>	Thomas, 1894	1	0.49	LC		
							1	-
62	Maxwell's Duiker	Bovidae <i>Cephalophus maxwelli</i>	Smith, 1827	1	0.49	LC		
							1	-
63	Fire-footed Rope Squirrel	Sciuridae. <i>Funisciurus pyrropus</i>	Cuvier, 1833	1	0.49	LC		
							1	-
64	Giant Gambian Rat Pouched Rats	Nesomyidae <i>Cricetomys gambianus</i>	Waterhouse, 1840	1	0.49	LC		
							1	-
65	Bushbuck	Bovidae <i>Tragelaphus scriptus</i>	Pallas, 1766	1	0.49	LC		
							1	-