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ENVIRONMENTAL PROTECTION AGENCY (Government of Sierra Leone)

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A COMPENDIUM OF THREATENED AND RARE FOREST FAUNA IN SIERRA LEONE

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EXECUTIVE SUMMARY

Sierra Leone (central coordinates – 6°55' – 10°14'N and 10°14' – 13°17'W), located on the western edge of West Africa, is a relatively small country both in terms of land area (72,300 sq. km) and population (about 6.5 million). Agriculture, mainly slash-and-burn, accounts for 60 - 65% of the country's gross national product (GNP), and is practiced by most rural communities, which heavily depend on it for subsistence. This situation has resulted in accelerated levels of deforestation and habitat destruction that have direct negative on impacts on the environment and on biodiversity. Sierra Leone has an interesting topographic characteristic, divided into four physical regions as follows: coastal lowlands, interior plains, interior plateau and scattered mountains and hills. The range of topographic features in the country strongly correlates the environmental conditions in the country, as evident in: (a) the variation in vegetation types, microclimate and habitats; (b) the diversity of fauna that inhabits the different macro and micro habitats. The country's geographic location is the key factor that dictates its biogeographic characteristics, its broader vegetation distribution, comprising the Sudan-Guinea savanna and the Guinea-Congo forest, and thus, the distribution and diversity of its fauna. Sierra Leone is located on the western portion of the non-contiguous Guinea-Congo biome, characterised by a sub-regional fragmented moist evergreen and semi-deciduous forest biogeographic settling called the Upper Guinea forest, mainly found in the eastern to southern sector of the country.

The purpose of this study is to produce a compendium of threatened and rare forest fauna found in Sierra Leone. The document will particularly be of immense importance to academics and practitioners in field of the ecology and conservation, to conservation managers and policy makers, to the tourism industries, tourists and tour guides, and to the general public. It is also envisage that the document could attract investment in the ecotourism sector, thereby contributing to the national agenda for prosperity. Much of the information will be based on the International Union for the Conservation of Nature (IUCN) Red List, which shows the different categories of threatened status of species as follows: Critically Endangered (CE), Endangered (EN) and Vulnerable (VU). In addition, species that fall under the non-threatened categories, that is, Near Threatened (NT) and Data Deficient (DD) have been considered. All species in the threatened and non-threatened categories are referred to as species of global conservation concern. However, recent assessments by local scientists have highlighted the low presence and

sparse/restricted distribution of species within the national forest estate. Baseline data shows that Sierra Leone currently holds close to 1800 of terrestrial fauna of various phyla and classes, placed in various IUCN threat categories as shown in Table 1.

Table 1. The number species of various taxonomic groups categorized under IUCN threat status. EN – Endangered; VU – Vulnerable; NT – Near Threatened; DD – Data Deficient; LC – Least Concern; SC – Species of Conservation Concern; NS – Number of species

Taxonomic group	CR	EN	VU	NT	DD	Total SC	Total NS
Mammals	0	4	11	8	3	26	170
Birds	0	3	10	12	3	28	642
Reptiles	3	3	1	1	0	8	67
Amphibians	0	5	1	13	7	26	55
Butterflies	0	0	0	4	0	4	800
Total number	3	15	23	28	13	92	1734

A combination of methods was applied to generate the data used in compiling both the literature review and the final compendium lists, with coverage limited only to forest and forest-related fauna. Data obtained since 2005 are the most utilized in compiling the technical details of species included in the compendium, supported by *adhoc* field surveys. Based on baseline data, 170 mammal species are now known to occur in Sierra Leone. These include 15 species of primates (six of which are globally threatened, including the charismatic Western Chimpanzee *Pantroglodytes verus*), 18 species of antelopes occur (16 considered threatened and/or rare) and nine species of fruit-bat (one, *Epomops buettikoferi*, is endemic to the Upper Guinea forests). In the case of birds, 642 species of birds occur in Sierra Leone – 489 resident species and 143 migratory species. Among the migratory species are 96 species of Palearctic migrants and 47 species of Intra-African migrants. Of the resident species, 307 show proof of breeding, including 174 species restricted to the Guinea-Congo forest biome of which 15 species are endemic to the Upper Guinea forest Endemic Bird Area (Stattersfield et al., 1998). Considering all biogeographic representations, a total of 28 species of birds are of global conservation concern, consisting of three endangered (EN), 10 vulnerable (VU), 12 near threatened (NT) and three data deficient (DD) species.

Among the reptiles are three species of crocodiles (two globally threatened); five species of marine turtles (all of which are globally threatened); many species of tortoises (two globally threatened), four species of monitor lizards (one threatened). There are 55 species of amphibians listed for Sierra Leone, of which 5 are endangered, 1 vulnerable, 13 near threatened and 7 are considered as data deficient. Among the amphibians are 13 species of frog, one of which *Cardioglossa aureole (*new name *Arthroleptis aureole*) is endemic to West Africa, with records from the Western Area Peninsula Forest and Bumbuna); and 42 species of toad (one species *Amietophrynus cristiglans*), which is also endemic to the region, occurs in the Tingi Hills Forest Reserve. Comparatively the amphibians are the most threatened of all vertebrate taxa in the country.

The compendium on forest fauna covered four vertebrate taxa: mammals, avifauna (birds), reptiles and amphibians. The table below gives details on the number of species per taxa and the IUCN categories applicable.

Table 7. Numerical details of the species distribution of threatened and rare forest fauna into various threatened status mainly based on IUCN (2015) categories.

Category	Mammals	Avifauna	Reptiles	Amphibians	Category. total
Critically Endangered	0	0	1	0	1
Endangered	4	2	0	3	9
Vulnerable	7	10	1	1	19
Near Threatened	7	5	0	6	18
Data Deficient	1	3	0	0	4
Least Concern	0	2	0	0	2
Species total	19	22	2	10	53

The compendium includes the following information on the species: scientific data on the species; the IUCN (2015) status and CITES Appendix, where available; the picture of the species (including its source); the local status of the species; Average body length of the species; Local name of the species; General description of the species (its morphology and behaviour), the habitat where the species is found, its food or feeding habit; distribution of the species, in terms of the locations where the species occur; conservation issues (including threats to the species); and a distribution map.

ACKNOWLEDGEMENT

The production of this report has been made possible, thanks to funds provided by the Environmental Protection Agency of the Government of Sierra Leone and the support of staff of the Agency, particularly the Executive Director, Mdm Haddijatou Jallow and the Acting Director of Research, Mr. Alie Jalloh. Many thanks also to the following individuals and institutions for their various forms of technical support, particularly the provision of baseline data on species: the Head of Department and technical staff of the Department of Biological Sciences, Fourah Bay College, University of Sierra Leone; the Executive Director and staff of the Conservation Society of Sierra Leone; the Manager and staff of the Gola Forest National Park; the Manager and staff of the Sierra Leone Biodiversity Conservation Project.

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SECTION ONE
GENERAL INTRODUCTION

1.1 Background and Context

Sierra Leone, located on the western edge of West Africa (central coordinates – 6°55' – 10°14'N and 10°14' – 13°17'W), has a land area of 72,300 sq. km, and is among the smallest countries in Africa. The country is bordered by the Republic of Guinea to the north and northeast, Republic of Liberia to the southeast and the Atlantic Ocean to the west and southwest. The current population is estimated at about 6.5 million (UNDP, 2013), pending a more holistic population census in 2015. The national population distribution is grossly skewed towards urban areas, with very high concentrations in the capital, Freetown, to low concentration in the countryside. The 2004 census shows that the population comprises about 40% persons under the age of 15, about 55% between 15 and 65 and only about 4% above the age of 65 years (Statistics Sierra Leone, 2004). Life expectancy at birth in the country is estimated at an average of 53 years (UNDP, 2013).

Agriculture is the main economic activity in the country, accounting for between 60 to 65% of the country's gross national product (GNP). Most of the rural communities depend heavily on subsistent slash-and-burn bush fallow agriculture. However, bush fallow agriculture has been on the decline over the last two generations, with recent estimates showing a steady drop in fallow periods, largely due to population increase and decline in crop yield (Gleeve, 1996; Okoni-Williams, 2013). The situation is putting additional pressure on pristine habitats, especially forest and wetlands, as rural farming communities search for more productive agricultural lands. Nevertheless, the economy improved considerable over the last few years, but most of the growth has largely been a consequence of increased investment in the mining sector. This situation has resulted in accelerated levels of deforestation and habitat destruction that have direct negative on impacts on the environment and on biodiversity.

Sierra Leone has an interesting topographic characteristic, divided into four physical regions as follows: coastal lowlands, interior plains, interior plateau and scattered

mountains and hills. The coastal plains consists of a narrow strip, 40 km wide and altitude of less than 74 m above sea level (asl), occupying the west to south-western sector of the country. The coastal plain is interrupted by inselbergs and merges into the interior plains, which rises to 200 m asl, extends for about 50 – 130 km inland, covering about 43% of the land area. An escarpment rises abruptly, running almost parallel to the interior plains, giving rise to the interior plateau, which is mainly associated with the eastern sector of the country and covers about 22% of the country. The interior plateau is characterised by hills and mountain ranges, climaxed by two massifs in northeast of the country: the Bintimani at 1945, the highest peak in West Africa, west of Mount Cameroon; and the Sankan Birriwa, at 1709 m. Other hill ranges includes the Western Area Peninsula Forest (900 m asl), the Kambui Hills (695 m asl) and Kangari Hills (650 m asl), among others.

The range of topographic features in the country strongly correlates the environmental conditions in the country, as evident in: (a) the variation in vegetation types, microclimate and habitats; (b) the diversity of fauna that inhabits the different macro and micro habitats. The combination of marine, coastal, lowland, highland and mountain biophysical features is a mixed blessing to Sierra Leone's fauna and other biodiversity components. Thus, the faunal diversity in the country is wide-ranging and widely distributed across the country's major biogeographic zones.

1.2 Sierra Leone's Bio-geography and Forest Distribution

Sierra Leone's geographic location is thus, the key factor that dictates its biogeographic characteristics, its broader vegetation distribution (Fig. 1) and thus, the distribution and diversity of its fauna. Two broad biogeographic zones characterise much of the climate in West Africa: the Sudan-Guinea savannah and the Guinea-Congo forest biomes. Sudan-Guinea savannah biome, which comprises components of grassland and woodland savannahs occurs in the north to northwest of the country, but is interrupted in few places by remnants of close forests, especially to the northeast. Some of the major plant communities associated with the Sudan-Guinea savannah zone include Lophira (*Lophira lanceolata*) tree savannah, *Imperata cylindricus* and *Panicum laxium* dominated grass communities. Mixed tree/grass savannas are common vegetation types, whereas larger patches of forest are mainly found within protected areas, such as the Loma

Mountains National Park and the Tingi Hills Forest Reserve. Montane forest and montane grassland communities only occur at Loma Mountains and Tingi Hills.

The Guinea-Congo forest biome is subdivided into two non-contiguous biogeographic components: the Upper-Guinea forest and the Lower Congo forest that have been separated by a strip of Sudan-Guinea savannah called the Benin Gap. Sierra Leone is located on the western edge of the Upper Guinea forest, which extends between the Republic of Guinea and the Republic of Ghana. The Upper Guinea forest is characterised by closed moist evergreen forest and is found in the eastern to southern sector of the country with elements of forest/savannah mosaic towards the north, indicating a transition zone between the two major biome types. Although these two broad sub-divisions of the western forest biome in Africa have some levels of commonalities in their biodiversity, they are distinguished by a significant array of endemic flora and fauna, respectively.

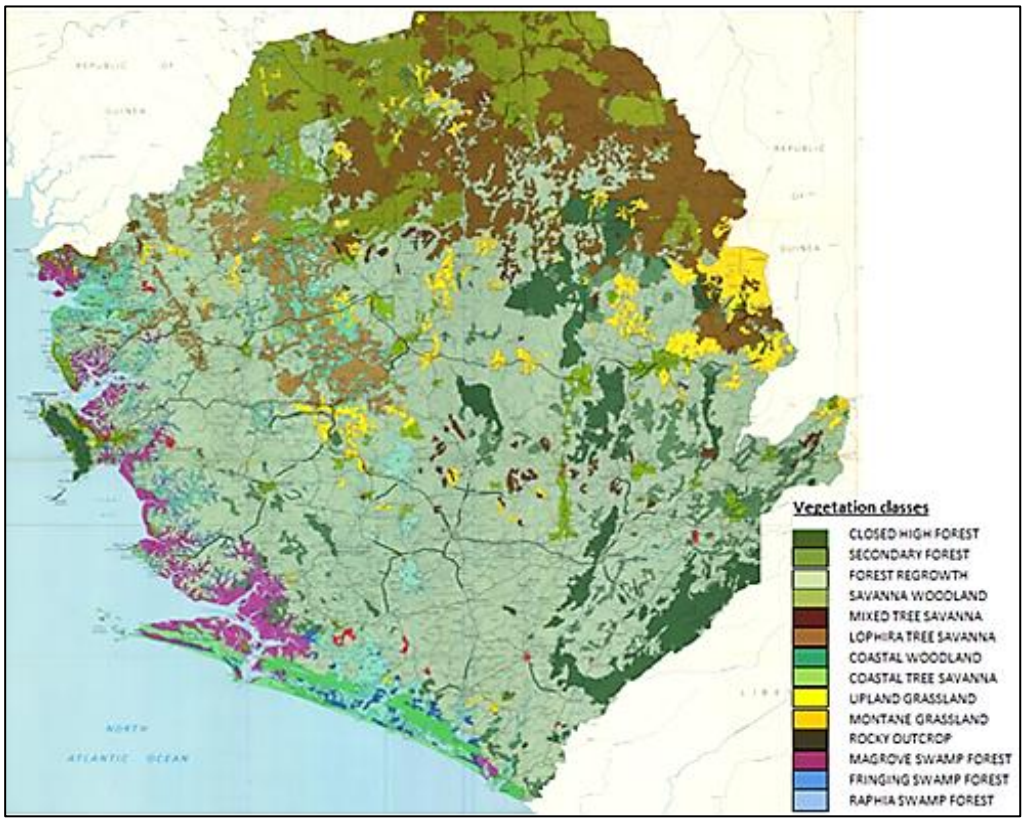

Figure 1. Vegetation map of Sierra Leone (Source: Panagos et al, 2011). Note that the closed moist forests are mainly found in the north-east to the south-east sector of the country.

Over the last century or so, the country's vegetation has been transformed largely by slash-and-burn agriculture, to the extent that only remnants of closed forest formations can be found in this zone today (Birchall et al., 1979). Lately, expansion of human settlements around the urban areas and increased levels of industrial and artisanal mining are compounding the pressure on forests and biodiversity in general. At present, less than 5% closed forest formations remain and are largely restricted to protected areas, mainly in the north-eastern to the southern sections of the country as shown from the Important Bird Areas survey (Fig. 2) (Okoni-Williams et al., 2005). Thus, the distribution and fragmented nature of the forest vegetation, in addition to pressure from anthropogenic activities is the defining factor determining the diversity and conservation status of the country's forest fauna.

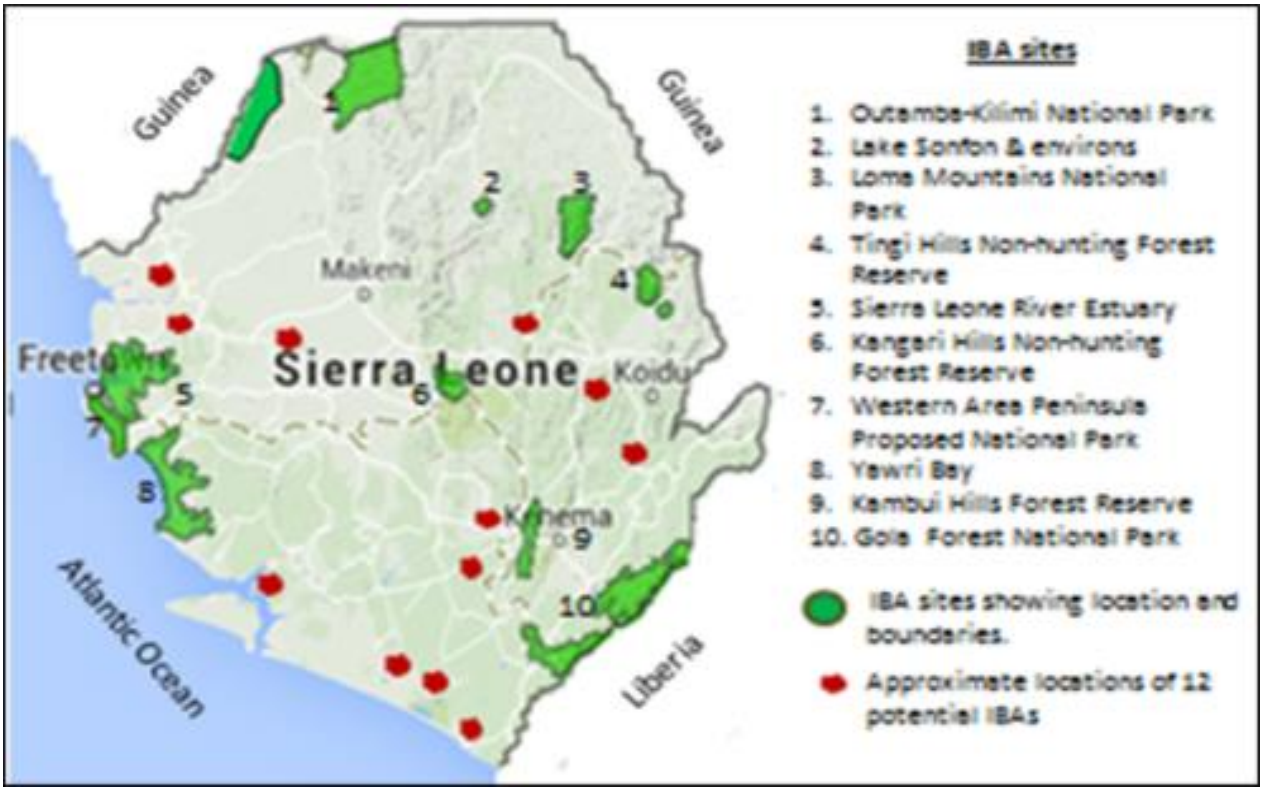

Figure 2. Map of Sierra Leone showing the location of IBA sites. Sites 3, 4, 6, 7, 9 and 10 and the five potential IBAs are the east are all forests. These sites are flagships for biodiversity conservation in the country and support most of the threatened and rare forest fauna in the country. (Source: Okoni-Williams et al., 2015).

1.3 The Purpose, Objectives and Rational for a Compendium

The purpose of this study is to produce a compendium of threatened and rare fauna found in forests in Sierra Leone. This report explores all literature on rare and threatened fauna in the country. Field assessments were undertaken to address gaps in information on each of the groups of fauna included in the study. The literature review, which precedes the actual compendium document, also explored the depth of information on the general diversity of fauna in Sierra Leone, based on various studies conducted at a number of key forest reserves in the country. More attention was paid to mammalian fauna, avifauna and herpetofauna, which comprises much of the megafauna for which much data is already available. However, mentioned is made of the diversity of butterflies and the conservation status of some of the species of interest. A section has been included on the content and structure of the compendium, which details the nature and level of information given in the document.

The main purpose of the Compendium of Threatened and Rare Forest Fauna in Sierra Leone, is to promote interest in the status of forest animal species in the country. The objectives are as follows:

- To bring into the limelight the conservation status of some forest animal species in the country;
- To make the information widely available to people of various categories, including researchers and entrepreneurs;
- To attract and facilitate investment opportunities for wildlife-related enterprises such as ecotourism.

The document will particularly be of immense importance to academics and practitioners in field of the ecology and conservation, to conservation managers and policy makers, to the tourism industries, tourists and tour guides, and to the general public. It is also envisage that the document could attract investment in the ecotourism sector, thereby contributing to the national agenda for prosperity. The compendium has been designed to be used for identification and understanding of the location, distribution and abundance of the species covered.

SECTION TWO
THE IUCN RED LIST SYSTEM FOR ASSESSING SPECIES STATUS

2.1 Background

The International Union for the Conservation of Nature (IUCN), has over the years very instrumental in identifying species with high risk of extinction globally. The publication of the IUCN Red List Categories and Criteria has been used as a standard for global Red List assessments published on the *IUCN Red List of Threatened Species* alongside the Guidelines for Application of *IUCN Red List Criteria at Regional and National Levels* (IUCN 2003, 2012).

According to IUCN (2012), The IUCN Red List Categories and Criteria have several specific aims:

- to provide a system that can be applied consistently by different people;
- to improve objectivity by providing users with clear guidance on how to evaluate different factors which affect the risk of extinction;
- to provide a system which will facilitate comparisons across widely different taxa;
- to give people using threatened species lists a better understanding of how individual species were classified.

Taxa that are considered by IUCN as having high risk of extinction are put into three categories of threatened status: Critically Endangered (CE), Endangered (EN) and Vulnerable (VU); together these categories are described as 'threatened' All species or low taxa that listed as Critically Endangered qualify for Vulnerable and Endangered, and all listed as Endangered qualify for Vulnerable. For species to be qualified for listing into any of the categories, they must satisfy a range of quantitative criteria. Each taxon should be evaluated against all the criteria. Meeting any one of these criteria qualifies a taxon for listing at that level of threat. The criteria can be applied to any taxonomic unit at or below the species level.

The criteria may also be applied within any specific geographic or political area, but it is important to refer to guidelines prepared by the IUCN/SSC Regional Applications

Working Group and the National Red List Working Group of the IUCN SSC Red List Committee (IUCN, 2012; 2013). When applied at national or regional levels it must be recognized that a global category may not be the same as a national or regional category for a particular taxon. For example, taxa classified as Least Concern globally might be Critically Endangered within a particular region where numbers are very small or declining, perhaps only because they are at the margins of their global range. Conversely, taxa classified as Vulnerable on the basis of their global declines in numbers or range might be Least Concern within a particular region where their populations are stable (IUCN, 2012). These categorisations are based on population and distribution patterns of the species, and the current and potential threats that species face, as explained in the following:

2.2 The IUCN Red List Categories and Criteria

The International Union for the Conservation of Nature (IUCN) is the international authority responsible for assessing the conservation status of species of all taxon, including flora and fauna. Information is fed to IUCN through Regional and National Species Red List Working Group, particularly from the result of research, surveys and studies that are conducted by both national and expatriate ecologist. According to the IUCN, the Red List Categories and Criteria are intended to be an easily and widely understood system for classifying species at high risk of global extinction. The general aim of the system is to provide an explicit, objective framework for the classification of the broadest range of species according to their extinction risk. However, while the Red List may focus attention on those taxa at the highest risk, it is not the sole means of setting priorities for conservation measures for their protection.

2.2.1 Threatened Categories

There are three main categories that apply to extant populations that belong to the threatened categories. There are Critically Endangered (CR), Endandered (EN) and Vulnerable (VU). Summaries of these categories are given below and details can be obtained from Appendix 1 (IUCN, 2013):

Critically Endangered (CR)
A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see Section V), and it is therefore considered to be facing an extremely high risk of extinction in the wild.

Endangered (EN)
A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (see Section V), and it is therefore considered to be facing a very high risk of extinction in the wild.

Vulnerable (VU)
A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (see Section V), and it is therefore considered to be facing a high risk of extinction in the wild.

2.2.2 Non-Threatened Categories

Additional categories may be applicable to species that do not meet the criteria for qualification to any of the threatened categories described in the foregoing. These are important because they indicate whether or not there is need for action to prevent species from becoming threatened. These categories are as follows according to IUCN (2012):

Near Threatened (NT)
A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

Data Deficient (DD)
A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more

information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases great care should be exercised in choosing between DD and a threatened status. If the range of a taxon is suspected to be relatively circumscribed, and a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.

Not Evaluated (NE)

A taxon is Not Evaluated when it is has not yet been evaluated against the criteria.

2.3 Notes on Species Conservation Status

Species that have been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened are categorized as Least Concern (LC) and those for which no evaluation has been made against the criteria for any of the categories are classified as Not Evaluated (NE). This report has focus on species in the threatened, near-threatened and data deficient categories that occur in forests. Invariably, most species that have been globally classified under each of the IUCN categories are applicable to same taxa that are found in Sierra Leone, and so are indeed of global and national conservation concern. However, there are a few species that could be common in other countries, but may need to be reclassified locally; thus the need for the National Red List Working Group of the IUCN SSC Red List Committee to collaborate with local scientists to resolve such issues. An allied committee could be set up through collaboration between the EPA, NPAA, Forestry Division and the Universities to address issues of national and local species rarity and threat status.

SECTION THREE

CURRENT KNOWLEDGE ON THREATENED AND RARE FAUNA IN SIERRA LEONE

3.1 Overview of Threatened and Rare Species

The list of fauna that are considered threatened in Sierra Leone has so far been based on the IUCN categorizations outlined in Section Two. Thus, most publications and reports on species conservation status (e.g. Lebbie, 2001; Okoni-Williams et al., 2005; Klop et al, 2008) have made reference to the relevant IUCN categorizations. However, recent assessments by local scientists have highlighted the low presence and sparse/restricted distribution of species within the national forest estate. Baseline data shows that Sierra Leone currently holds close to 1800 of terrestrial fauna of various phyla and classes, placed in various IUCN threat categories as shown in Table 1.

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Taxonomic group	CR	EN	VU	NT	DD	Total SC	Total NS
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Amphibians	0	5	1	13	7	26	55
Butterflies	0	0	0	4	0	4	800
Total number	3	15	23	28	13	92	1734

Only IUCN categorizations that are applicable to Sierra Leone have been considered. All terrestrial vertebrate groups found in forests are included; however, butterflies have been included to represent the invertebrates because of the lack of data on other groups of invertebrates. From an analytical perspective, only about 5% of the species in the taxa covered are listed as species of global conservation concern by IUCN categorizations. The graph is Figure 3 shows that there are higher proportions of species considered as least concern compared to those threatened for the respective taxa covered. However, it is significant to note that of all the animal taxa considered, the

amphibians are the most relatively threatened as almost 50% of the species are placed in one threatened category or another. Also significant is the fact that only reptiles (three species) are listed under the Critically Threatened (CR) category of the IUCN for Sierra Leone fauna. Thus, the herpetofauna are the most threatened group of fauna, followed by mammals, birds, and butterflies in descending order of threat status.

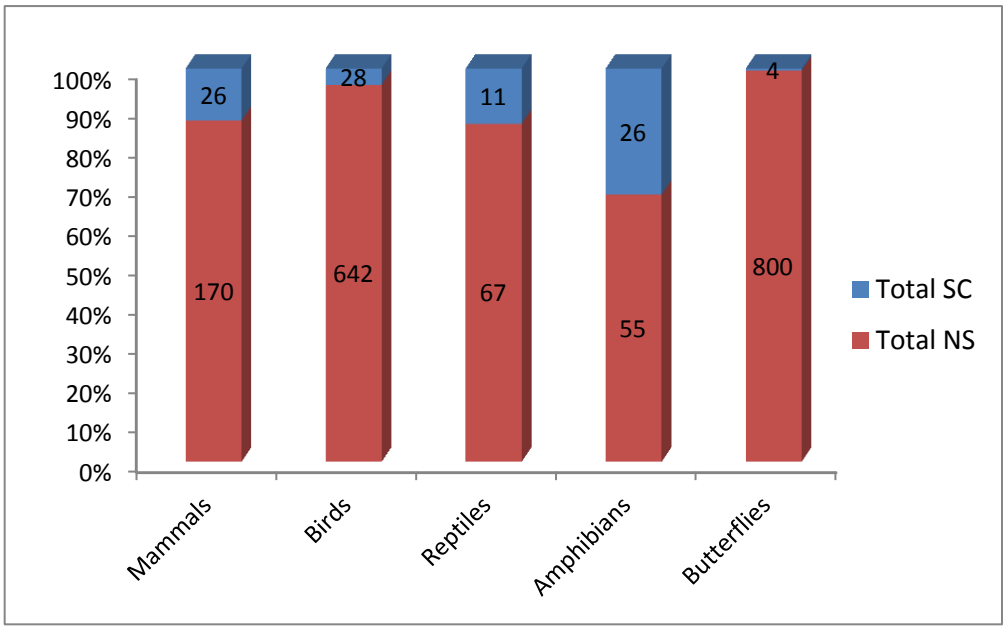


Figure 3. Proportion of species with global conservation concern to those considered as list concern by IUCN (2013). SC – Species of Conservation Concern; N – Numbers of Species.

3.2 Methodology

A combination of methods was applied to generate the data used in compiling both the literature review and the final compendium. At this stage, coverage is limited to forests and forest reserves where surveys have been done, backed by information from a few field visits and anecdotal observations in areas scarcely visited by ecologists.

3.2.1 Site and Habitat Coverage

Since the compendium covers threatened and rare forest fauna, all the main forest reserves in the country were covered. According to the vegetation map shown in Fig 1, most forest reserves occur on the north-east to south-eastern sector of the country, with

the most important forest reserves being the ca74,000 ha of moist closed forest at Gola National Park; an isolated extension of that range of non-contiguous forest is the Western Area Peninsula Forest. Therefore the distribution of forest reserve dictates the pattern of occurrence of threatened and rare forest fauna in the country.

Data obtained since 2005 are the most utilized in compiling the technical details of species included in the compendium, because it is obvious that the status of species and their habitats may not have changed significantly over the last ten years. However, any inconsistencies and gaps in information are addressed through field visits, which involved actual search for species in suspected locations and interviews with local inhabitants, information from ecologists with good field experience and government forest and wildlife officers.

3.3 FINDINGS ON THREATENED AND RARE FAUNA

3.3.1 Threatened and rare mammals

The earliest systematic study of mammals in Sierra Leone were conducted by Armstrong (1984), Cross (1977), Davies (1987), Jaeger et al. (1966), Jones (1966), Taylor (1984), and Turner and Broad (1996). The most recent national assessment of mammalian fauna was conducted by Grubb et al. (1998) who gave an overview of the mammal species found in Sierra Leone, whilst localized surveys have been carried out at Gola Forest (Klop et al., 2008), Bumbuna (Nippon Koei, 2007) and Loma Mountains forest reserve (Ref). Corroborating the data from all these studies, 170 mammal species are now known to occur in Sierra Leone. These include 15 species of primates (six of which are globally threatened), including the charismatic Western Chimpanzee *Pantroglodytes verus*. Also, 18 species of antelopes occur (16 considered threatened and/or rare) and nine species of fruit-bat (one, *Epomops buettikoferi* (VU), is endemic to the Upper Guinea forests). According to Whiteside et al. (1988) and Oates et al. (1990), Tiwai Island which is located south of Gola West, has one of the highest-known densities of monkeys in Africa. Other threatened mammals include Western African Elephants *Loxodonta africana cyclotis* (EN), Pygmy Hyppoppotamus *Hexaprotodon liberiensis* (VU) and West African Manatee *Trichechus senegalensis* (VU). In terms of small mammals, there are 11 species of insectivores (1 hedgehog, 10 shrews), 10 species of

fruit bats (Pteropodidae), 45 species of insectivorous bats (Microchiroptera), three species of small nocturnal primates, 40 rodent species (Rodentia), and one hare (Lagomorpha). In total, 27 species of mammals are listed in various IUCN threatened categories (Table 2). Note that most of the threatened mammals are found in forest habitats. Species that are considered locally rare, but not on IUCN Red List are listed in Table 3, a good proportion of which occur in forests.

Table 2. Mammalian species in Sierra Leone listed under IUCN Red List and their habitat specificity. FF – Close Primary forest; F – close forest; FD; degraded forest; FW – Wet areas in forests; S – Savanna; W – wetlands; EX – Extinct

Common/Scientific names	IUCN Status	Habitat Specificity
Western Chimpanzee Pan troglodytes verus	EN	F/FD
Diana Monkey Cercopithecus Diana	VU	FF
Red Colobus Monkey Poliocolobus badius	EN	FF
Olive Colobus Monkey Poliocolobus verus	NT	F
Sooty Mangabey Cercocebus torquatus	VU	FD
Pied Colobus Monkey Colobus polykomus	VU	F
Guinea Baboon Papio papio	NT	S
Spotted-necked Otter Hydrictis maculicollis	NT	W
Cape Clawless Otter Aonyx capensis	NT	W
Golden Cat Profelis aurata	VU	F
Leopard Panthera pardus	NT	F
Lion Panthera Leo	VU	Locally EX
West African Manatee Trichechus senegalensis	VU	W
African Elephant Loxodonta Africana cyclotis	VU	F/FD
Pygmy Hippo Hexaprotodon liberiensis	EN	FW
Bongo Tragelaphus eurycerus	NT	F
Zebra Duiker Cephalophus zebra	VU	F
Jentink's Duiker Cephalophus jentinki	EN	F
White-bellied Pangolin Phataginus tricuspis	VU	FD
Giant Pangolin Smutsia giganteus	VU	F
Water Chevrotin	DD	W
Straw-coloured fruit bat Eidolon helvum	NT	F
Tear-drop fruit bat Scotonycteris ophiodon	NT	F
Guinea Horseshoe bat Rhinolophus guineensis	VU	F
Slender-billed squirrel Protoxerus aubinnii	DD	F
Small Sun Squirrel Heliosciurus punctata	DD	FF
Temmink's squirrel Epixerus ebii	DD	F
Total with IUCN threatened Status – 27; EN – 4; VU – 11; NT – 8; DD - 3		

Table 3. Mammalian species considered rare in Sierra Leone and habitat specificity. FF – Close Primary forest; F – close forest; FD; degraded forest; FW – Wet areas in forests; S – Savanna; W – wetlands.		
Species Name	**Status**	**Habitat Specificity**
Yellow-backed Duiker *Cephalophus silvicultor*	Locally Rare	F
Spotted Hyaena *Crocuta crocuta*	"	S
Serval Cat *Leptailurus serval*	"	F
Tree hyrax *Dedrohyrax dorsalis*	"	F
White-tailed Mongoose *Ichneumia albicauda*	'	F
Antbear (Aardvark) *Orycteropus afer*	"	S
Potto *Perodicticus potto*	"	F
Demidoff Galago *Galagoides demidoff*	"	FF
Side-striped Jackal *Canis adustus*	"	FF
Honey Badger *Mellivora capensis*	"	FD/S
Forest Genet *Genetta pardina*	'	FF
Red River Hog *Potamochoerus porcus*	"	W
Bushbuck *Tragelaphus scriptus*	"	F
Brook's Duiker *Cephalophus brookei*	"	W
Red-flanked Duiker *Cephalophus rufilatus*	"	F
Ogilby's duiker	"	F
Kob *Kobus kob*	"	F
Royal Antelope *Neotragus pygmaeus*	"	S
Dwarf Antelope *Neotragus batesi*	"	FF
Oribi *Ourebia ourebi*	"	F
Flying calf *Nanonycteris veldkampi*	"	FF
Nectar bat *Megaloglossus woermanni*	"	FF
Black hawk bat *Saccolaimus peli*	"	F
Central African Linsang (very rare)	"	

3.3.2 Threatened and Rare Avifauna

Since the 1990s, thorough ornithological surveys have been conducted nationwide, especially in forests (Dowsett and Dowsett-Lemaire, 1993; Okoni-Williams et al., 2005; Klop et al., 2008; Demey and Okoni-Williams, 2015). In total 642 species of birds occur in Sierra Leone – 489 resident species and 143 migratory species. Among the migratory species are 96 species of Palearctic migrants and 47 species of Intra-African migrants. Of the resident species, 307 show proof of breeding, including 174 species restricted to the Guinea-Congo forest biome of which 15 species are endemic to the Upper Guinea forest Endemic Bird Area (Stattersfield et al., 1998). Considering all biogeographic representations, a total of 28 species of birds are of global conservation concern, consisting of three endangered (EN), 10 vulnerable (VU), 12 near threatened (NT) and three data deficient (DD) species. A significant proportion of the threatened species occur in forest ecosystems, whilst forest reserves constitute the strongholds of most of the populations of these species.

The list if species of global conservation importance is given in Table 4. However, a number of other species considered rare in Sierra Leone, though not globally threatened have been considered for inclusion into the compendium. These included the Angola Pitta *Pitta angolensis*, the Yellow-mantle Weaver *Ploceus tricolor* and the Many-coloured Bush Shrike *Malaconotus multicolor* to name a few. Some of the rare forest bird species can be identified through their calls, but some of them are quiet and cryptic, that visual and call identification are almost impossible. In additional, there are a few nocturnal species (among the owls and nightjars) that are only scarcely encountered during night surveys.

Table 4. List of bird species of global conservation concern, their IUCN status and habitat specificity. NT - Near threatened; Vu – Vulnerable; En – Endangered; DD – Data deficient; New – recent additions to the list of species of conservation interest; Unchanged – status the same since 2005. FF – Closed moist forest; FD – Degraded forest; F – Primary/secondary forest; Wetlands; O – Open areas.

English and Scientific names	IUCN/BL Status	Habitat Specificity
Lesser Flamingo *Phoenicopterus minor*	NT	W
Bateleur *Terathopius ecaudatus*	NT	S
Hooded Vulture *Neophron monachus*	VU	F/O
Crowned Eagle *Stephanoaetus coronatus*	NT	F
Martial Eagle *Polemaetus bellicosus*	NT	S
Pallid Harrier *Circus macrourus*	NT	O
Lesser Kestrel *Falco naumanni*	VU	F/O
White-breasted Guineafowl *Agelastes meleagrides*	VU	FF
Great Snipe *Gallinago media*	NT	W
Damara Tern *Sterna balaenarum*	NT	W
Rufous Fishing Owl *Scotopelia ussheri*	EN	FF
Blue-moustached Bee-eater *Merops mentalis*	NT	FF
Brown-cheeked Hornbill *Ceratogymna cylindricus*	VU	FF
Yellow-casqued Hornbill *Ceratogymna elata*	VU	F
Yellow-footed Honeyguide *Melignomon eisentrauti*	DD	FF
Western Wattled Cuckoo-shrike *Campephaga lobata*	VU	FF
Green-tailed Bristlebill *Bleda eximia*	VU	F
Baumann's Greenbul *Phyllastrephus baumanni*	DD	FF
Yellow-bearded Greenbul *Criniger olivaceus*	VU	F
Lagden's Bush-shrike *Malaconotus lagdeni*	NT	F
Rufous-winged Illadopsis *Illadopsis rufescens*	NT	F
White-necked Picathartes *Picathartes gymnocephalus*	VU	F
Sierra Leone Prinia *Prinia leontica*	VU	FF
Black-capped Rufous Warbler *Bathmocercus cerviniventris*	NT	F
Nimba Flycatcher *Melaenornis annamarulae*	VU	FF
Gola Malimbe *Malimbus ballmanni*	EN	FF
Copper-tailed Glossy Starling *Lamprotornis cupreocauda*	NT	F
Emerald Starling *Lamprotornis iris*	DD	S

3.3.3 Threatened and Rare Herpes (Reptiles and Amphibians)

In addition to mammals and birds, Sierra Leone holds interesting species herpes many of which are of global conservation concern. Among the reptiles are three species of crocodiles (two globally threatened); five species of marine turtles (all of which are globally threatened); many species of tortoises (two globally threatened), four species of monitor lizards (one threatened). Table 5 is a list of the species of reptiles listed in the IUCN Red List. Note that three reptiles species have the highest level of threatened status (CR) in the country; three are endangered (EN), whilst none of the species under threat are placed under the lower risk category of the IUCN Red List.

Table 5. Reptile species in Sierra Leone listed under IUCN Red List for Sierra Leone and their habitat specificity. CW – Coastal Marine; W – Wetlands; FW – Wetlands in forest areas; F – Forest; FD – Degraded forest; FF – Primary forest. Source: RAP-SL (2015).

English and Scientific names	IUCN Status	Habitat Specificity
Leatherback Turtle *Dermochelys coriacea*	CR	CW
Hawksbill Turtle *Eretmochelys imbricata*	CR	CW
Loggerhead Turtle *Caretta caretta*	EN	CW
Olive Riddle Turtle *Lepidochelys olivacea*	EN	CW
Green Turtle *Chelonia mydas*	EN	CW
Senegal Flapshell Turtle *Cyclanorbis senegalensis*	NT	F
Slender-snouted Crocodile *Mecistops cataphractus*	CR	W
Dwarf Crocodile *Osteolaemus tetraspis*	VU	FW
Gray's Monitor *Varanus olivaceus*	VU	FF
African Softshell Turtles *Trionyx trunguis*	DD	F

In terms of the amphibians, there are 55 species listed for Sierra Leone, of which five are endangered, one vulnerable, 13 near threatened and seven are considered as data deficient. There are 13 species of frog one of which, *Cardioglossa aureole (*new name *Arthroleptis aureole*) is endemic to West Africa, with records from the Western Area Peninsula Forest and Bumbuna); and 42 species of toad (one species *Amietophrynus cristiglans*), which is also endemic to the region, occurs in the Tingi Hills Forest Reserve. Comparatively the amphibians are the most threatened of all vertebrate taxa in the country.

Table 6. Amphibian species in Sierra Leone listed under IUCN Red List and their habitat specificity. CW – Coastal Marine; W – Wetlands; FW – Wetlands in forest areas; F – Forest; FD – Degraded forest; FF – Primary forest; S – Savanna. Source: RAP-SL (2015).

English and Scientific names	IUCN Status	Habitat Specificity
Freetown Long-fingered Frog *Arthroleptis aureole*	EN	F
Togo toad *Amietophrynus togoensis*	NT	FW
Sierra Leone Reed Frog *Hyperolius chlorosteus*	NT	F
Ukami Reed Frog *Hyperolius torrentis*	EN	F
Wermuth's Reed Frog *Hyperolius wermuthi*	NT	FW
Nimba Reed Frog *Hyperolius zonatus*	NT	F
Chochran's Running *Frog Kassina cochranae*	NT	FW
Big-eyed Forest Tree Frog *Leptopelis macrotis*	NT	FD
Sierra Leone Water Frog *Odontobatrachus natator*	NT	F
Ringed River Frog *Phrynobatrachus annulatus*	EN	FF
Allen's River Frog *Phrynobatrachus alleni*	NT	F
Guinea River Frog *Phrynobatrachus guineensis*	NT	F
Liberia River Frog *Phrynobatrachus liberiensis*	NT	F
Tai River Frog *Phrynobatrachus phyllophilus*	NT	F
Sierra Leone Grassland Frog *Ptychadena superciliaris*	NT	F
Allen's Slippery Frog *Conraua alleni*	VU	F
Tingi Hills Frog *Amietophrynus cristiglans*	DD	F
Ptychadena arnei	DD	F
Mascarene Grass Frog *Ptychadena mascareniensis*	DD	S
Sierra Leone Grassland Frog *Ptychadena superciliaris*	NT	S
Ptychadena pujoli	DD	S
Grass Frog *Ptychadena retropunctata*	DD	S
Angel's Caecilian *Geotrypetes angeli*	DD	FD
Beautiful Squeaker *Arthroleptis formosus*	EN	F
Hylarana occidentalis	EN	FF

3.3.4 Other threatened and rare fauna to note

Among the mammals with historic record of presence in Sierra Leone are two species that are now considered regionally extinct within West Africa – Lion *Panthera leo* and African Wild Dog *Lycaon pictus*. Not much information is available on snakes and other reptiles other than those covered in this compendium. However, some species of snakes, particularly Gaboon Viper *Bitis gabonicca* is getting increasingly scarce because of habitat loss and persecution by man. Nevertheless, there is need to conduct a holistic survey of the population and distribution status of reptiles in the country. The organization called Reptiles and Amphibian Programme - Sierra Leone (RAP-SL) is well resourced in herpetological expertice and so can collaborate with the universities in conductin such surveys, when necessary.

Two endemic species of dragonfly, *Argiagrion leoninum* (EN) and *Allorhizucha campioni* (EN), have also been recorded, and the threatened African swallowtail butterfly *Papilio antimachus* (DD) reaches its westernmost limit in Sierra Leone. Systematic study of butterfly diversity and distribution has only been carried in three key locations – Gola Forest, Loma Mountains, Bumbuna area and the Western Area Peninsula Forest. These studies have shown that some 50 butterflies species in Sierra Leone are endemic to West Africa or to its Liberian subregion. Not many of these species are listed in the IUCN Red List, but the following are worth mentioning as species that are endemic with rare occurrences in the country: *Papilio horribilis*, *Neurellipes staudingeri*, *Charaxes nobilis claudei*, *Euphaedra aberrans*, *Euphaedra afzelii*, *Acraea vesperalis*, *Melphina maximiliani Kedestes protensa.* However, these species have not been included in this compendium because of lack of adequate data to show their distribution and these is hardly any focus given to butterflies in the implementation of biodiversity conservation action plans.

SECTION FOUR

STRUCTURE AND CONTENT OF THE COMPENDIUM

4.1 Background

The Environmental Protection Agency (EPA), Office of the President, Government of Sierra Leone has targeted the development of a compendium of threatened fauna in the country as one of its contractual obligation for the year 2015. The Terms of References (Appendix 3.1) for the assignment was developed and contract (Appendix 3.2) signed between the EPA and consultant to carry out the work, which should run for a period of nine to twelve months in 2015. The compendium document is expected to be delivered in December 2015. This section describes the content and structure of the compendium and explains what the readers or users are expected to gain from it. The information provided for each species has been obtained from the most recent surveys and research conducted at various forest reserves around the country.

4.2 Species and Habitat Coverage

As specified in the ToR, the compendium contains identification and distribution information for threatened and rare forest fauna in Sierra Leone. All terrestrial vertebrate groups associated with forest ecosystems, have been included in the document – mammals, birds, reptiles and amphibians, based mainly on data that are very recent and cogent. Data have mainly been obtained from forest and forest reserves in most areas in the country, particularly in the north-east to the south-east of the country, including the Loma Mountains National Park, the Gola National Park and the Kambui Hills forest. Data from the Western Area Peninsula Forest (the isolated westernmost extent of close forest formation in the country) also contributed significantly to the compendium.

The information source and spread is wide, incorporating data spanning a period of close to 50 years of research and documentation by national and expatriate scientists. Data that are perceived to be old and out-dated have been useful for presence/absence and abundance comparisons and are corroborated by recent findings and verified through field visits, where necessary. A total of 53 species of threatened and rare forest

fauna was included in this compendium, details of which are given in the Table 7 below:

Table 7. Numerical details of the species distribution of threatened and rare forest fauna into various threatened status mainly based on IUCN (2015) categories.

Category	Mammals	Avifauna	Reptiles	Amphibians	Category. total
Critically Endangered	0	0	1	0	**1**
Endangered	4	2	0	3	**9**
Vulnerable	7	10	1	1	**19**
Near Threatened	7	5	0	6	**18**
Data Deficient	1	3	0	0	**4**
Least Concern	0	2	0	0	**2**
Species total	**19**	**22**	**2**	**10**	**53**

4.3 Details of Information in the Compendium

The most important aspect of the compendium is the information on species and their distribution. For each species, the English and Scientific names are given, where available, its local name is also given. A picture of the species will also be provided; most of the pictures were obtained from various websites that have been indicated as part of the data included.

A distribution map of Sierra Leone will accompany each species identified and described; such a map shows the locations where the species can be found, an indication of the density or relative abundance of the species in such locations. Oval dots are used as indicators of presence, wherein the size of the oval dot is an indication of the abundance of the species in specific locations. The range of size of the oval dots is from small to medium to large, indicating low abundance, moderate abundance and

high abundance, respectively. The categorisation into these relative abundance indicators is based on the number of individuals of each species that may have been encountered during recent surveys.

The General Description includes a brief explanation of the morphological features that best describe the species, including its colour, shape, size and some dimorphic variations (if applicable), to help the readers/users have some mental impression of what the species really looks like. The Habitat summarises where the species primarily inhabits within the broad vegetation types where it occurs, whilst Food states the ecological feeding habit of the species. The Distribution indicated the different location where the species is certain to occur, based on data collected during various surveys; although the species may be found elsewhere. The Conservation Issues broadly covers the species status in terms threats, conservation action, in relation to the Wildlife Conservation Act and CITES implementation.

In addition to the species' morphological description, its habitat and distribution information, the following information are also given:

- Order and Family - the scientific classification for each of the vertebrate classes covered
- IUCN Red List (2014) status, which are Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT) and Least Concern (LC);
- The CITES Appendix in which the species is placed. This spells out the degree of protection CITES attaches to the species (www.cites.org) .
- The species' local and/or regional status. This gives an indication of population status and in the country.
- The average body length. This provides an indication of the size of the bird, which is difficult to assess from the picture. For mammals the body length covers the head to rump; for birds and reptiles the body length covers from the head to the tail; for amphibians the body length covers from head to rump. The unit used is cm. (Note that 10mm = 1cm; 100 cm – 1m)

In terms of the distribution, the following abbreviations have been used for the various protected areas where the species have been recorded:

NP – National Park
NHFR – Non-hunting Forest Reserve

FR – Forest Reserve

WS – Wild Sanctuary

WMA – Watershed Management Area

The arrangement of the species in the document is systematic and follows two systems as follows:

(i) The international phylogenetic placement of species even within a particular taxonomic group. Thus, mammals would be treated first followed sequentially by birds, reptiles, and amphibians within each class of animal, the phylogenetic arrangement is observed.

(ii) The IUCN categorisation, wherein species are arranged in accordance with their threatened status. The critically endangered are dealt with first, followed by the endangered, the vulnerable, the near threatened and the least concern. All relevant references applied to species and/or information included in the compendium are listed and a final reference list is included on the back pages of the document.

SECTION FIVE
THREATENED AND RARE FOREST MAMMALS

5.1 Endangered Forest Mammals

Western Chimpanzee *Pan troglodytes verus*

Order – Primate (the Apes).
Family - Hominidae
IUCN Status – Endangered
CITES – Appendix
Average body length – 76 cm
Local name – Babu
Picture – A. Okoni-Williams

Distribution map

General Description
This animal, though rare, is well known in Sierra Leone, particularly to people living in the rural areas. It is somewhat ugly face combined with its lack of tail, are the key distinguishing features used by local people to identify the animal. Chimpanzees depend on high trees for food and shelter. They move in groups of various sizes and set up nesting territories for breeding and care for the young. It is one of the flagships for habitat and species conservation in the country.

Habitat
Most concentrations are found in closed forests. They can also survive in isolated secondary forests.

Food
Mainly fruits, seeds, leaves and bark; but also termites, birds and small mammals

Distribution
Gola Forest NP, Western Area Peninsula Forest NP, Loma Mountains NP, Kangari Hills FR, Kambui Hills FR and Outamba-Kilimi NP. Nesting locations have also been found at Bumbuna Watershed Management Area.

Conservation Issues
Decline in the species' population is mainly a consequence of habitat loss and capture for domestic and international trade. The species is a serious victim of the pet trade and use in biomedical research in the western countries. The juveniles are the main targets during raids to capture them; in the process many others are killed. Conservation intervention is mainly through the implementation of the Wildlife Act, the CITES Convention and the establishment of the Tacugama Chimpanzee Rehabilitation Centre Forest NP

References
Kingdon, J. (1997); Brncic et al. (2010); www.tacugama.com

West African Red Colobus Monkey *Procolobus badius*

Order – Primate (the Apes).
Family – Colobidae
IUCN Status – Endangered
CITES – Appendix
Average body length – 55 cm
Local name – Monkey
Picture – www.dpreview.com

Distribution map

General Description

The Red Colobus monkey's body is generally dark grey to black on its back and red on its belly and limbs. It is mostly seen living and foraging in varying group sizes. The characteristic behavior of the species is its arboreal life style, as it actively moves through the canopy during foraging, courtship and general play activities. The species is aggressively territorial and can remain in one location for long years.

Habitat

Mainly in closed canopy primary forests. Seldom seen in degraded forests

Food

Exclusively fruits, seeds and leaves.

Distribution

Gola Forest NP, Loma Mountains NP and Kambui Hills FR.

Conservation Issues

The species' population has suffered mainly from deforestation, international pet trade and hunting for bush meat. Trophy hunting by hunters societies has had serious toll on the species population. Conservation intervention has been mainly through the implementation of Wildlife Act, CITES and conservation projects at various sites including the Gola forests. No species-targetl conservation action currently exists.

References

Kingdon, J. (1997); IUCN (2015)

Pygmy Hippopotamus *Choeropsis liberiensis*

Order – Artiodactyla
Family – Hippopotamidae
IUCN Status – Endangered
CITES – Appendix II
Average body length – 1.64 m
Local name – Hippo
Picture – www.arkive.org

Distribution map

General Description
This species is one of the very cryptic and little known wildlife in Sierra Leone. Its sturdy, thick-set body and thick skin is appropriate for its lifestyle. It is more active when foraging at night and very silent and sedentary during the day. Most empirical records have been through camera traps, whilst actual encounter has been very rare.

Habitat
Pygmy Hyppos are mostly found grazing on vegetation/grass in swamps and riparian banks of forested rivers and lakes.

Food
Feeds exclusively on plants – grasses, herbs, herbaceous shoots and fallen fruits leaves and young stems.

Distribution
It occurs in few locations in the Gola Forest NP and the Tiwai Island Wildlife Sanctuary, Loma Mountains NP, Outamba-Kilimi NP and Mamunta-Mayosso Wildlife Sanctuary.

Conservation Issues
This species is highly susceptible to habitat disturbance because its foraging activities are in direct conflict with farming and fishing activities of local people. Because they also graze on rice paddies, they could fall victim of traps and snares installed to control pests. There is a dire need for a national survey to establish the population and distribution of Pygmy hippos in the country. No species-target conservation action currently exists.

References
Kingdon, J. (1997); IUCN (2015).

Jentink's Duikers *Cephalophus jentinki*

Order – Artiodactyla
Family – Bovidae
IUCN Status – Endangered
CITES – Appendix I
Average body length – 76 cm (tall)
Local name – Gidi Gidi (Krio)
Picture – www.arkive.org

Distribution map

General Description

Jentink's duikers are the largest species of the duikers in Sierra Leone. Their bodies have distinct colour patterns – black from the head to the shoulders, followed by a white band that goes over the shoulders and tend to be contiguous with white on its underside and legs. The rest of the body from the white shoulder band, is gray, down to the very short tail. Jentink's duikers have thin slightly curved horns that reach between 14 and 21 cm, depending on the age of the animal. They are nocturnal and shelter during the day in dense thickets, or buttress roots, apparently in pairs, and are reported to be territorial animals.

Habitat

Jentink's duikers mainly inhabits close canopy forest, but has been seen in mature secondary forests.

Food

They feed on fruit, flowers, and leaves which have fallen from the canopy, as well as stems of seedlings, roots, and, , palm nuts, mangos, and cocoa pods

Distribution

It occurs in few locations in the Gola Forest NP and the Tiwai Island Wildlife Sanctuary and Loma Mountains NP,

Conservation Issues

This species is seriously threatened by to habitat destruction through agriculture and hunting for meat and trade. Its foraging activities brings it in direct conflict with farming of local farmers, so are vulnerable to hunting and trapping. Its conservation needs are being addressed through the Wildlife Conservation Act and CITES implementation. No species-target conservation action currently exists.

References

Kingdon, J. (1997); IUCN (2015).

5.2 Vulnerable Forest Mammals

Diana Monkey *Cercopithecus diana*

Order – Primate (the Apes).
Family - Cercopithecoidae
IUCN Status – Vulnerable
CITES – Appendix I
Average body length – 44 cm
Local name – Monkey
Picture – www.konicaminolta.com

Distribution map

General Description
The Diana monkey is an agile primate known only by local people who live adjacent to forests where they occur. Outside these areas, the species is scarcely recognized by the general public. Its unique feature is the strongly contrasting and distinct patterns of white, rufous and dark grey parts of the body. Its face is black, but the rest of its front is white; the body is dark grey, but the lower back and rump is dark brown/rufous.

Habitat
Mainly in closed canopy primary forests. Arboreal lifestyle. Seldom seen in degraded forests

Food
Mainly fruits and seeds; sometimes leaves, invertebrates and small vertebrate.

Distribution
Gola Forest NP, Loma Mountains NP and Kambui Hills FR.

Conservation Issues
The species' population has suffered mainly from deforestation, international pet trade and hunting for bush meat. It is scarcely seen outside closed forest areas. Intervention has mainly been through the implementation of Wildlife Act, CITES and conservation projects at various sites including the Gola forests. No species-targetl conservation action currently exists.

References
Kingdon, J. (1997)
IUCN (2015)

Pied Colobus Monkey *Colobus polykomos*

Order – Primate (the Apes).
Family – Colobidae
IUCN Status – Vulnerable
Average body length – 58 cm
Local name – Monkey
Picture – www.dpreview.com

Distribution map

General Description
This species is otherwise called the Black-and-White Colobus monkey. The distinguishing feature of this species of monkey is its distinctive white tail, which makes it easily identifiable. The facial hair shoulders to forearm are silvery white, but the rest of the body is black. The Pied Colobus monkey is frequently observed jumping between branches of tall trees in closed canopy forest and gallery forest.

Habitat
Closed canopy primary forests; seldom seen in secondary forests

Food
fruits, seeds, buds and flowers of dominant canopy trees

Distribution
Most population found in Gola Forest NP, Loma Mountains NP and Kambui Hills FR, Western Area Peninsula Forest NP.

Conservation Issues
The species population is declining due to hunting and forest habitat loss. Conservation intervention is through the implementation of Wildlife Act, CITES and conservation Intervention projects at various sites including the Gola forests. No species-target conservation action currently exists.

References
Kingdon, J. (1997)
IUCN (2015)

Golden Cat *Profelis aurata*

Order – Carnivora
Family – Felidae
IUCN Status – Vulnerable
Average body length – 80 cm
Local name – Wild cat
Picture – www.arkive.com

Distribution map

General Description
This species of wild cat is golden brown in colour, with characteristic dark grey spots on paler underside to its inner limbs. Care should be taken not to wrongly identify grey colour morphs, which are not uncommon. The species mostly active at night hunts mainly at night and preys mostly on duikers, hyraxes and rodents, but monkeys are also likely.

Habitat
Closed moist forest to riverine forests and montane forest

Food
Duikers, monkeys, rodents and birds.

Distribution
The few populations of golden cat are known to be restricted to the Gola Forest NP, Loma Mountains NP and the Tingi Hills NHFR. Encounter rates are scarce, but because of small home range, they can frequently be seen in these known locations.

Conservation Issues
The species population is declining due to hunting and habitat loss. Conservation intervention is through the implementation of Wildlife Act, CITES and conservation projects at various sites including the Gola Forests NP and Loma Mountain NP. No species-target conservation action currently exists.

References
Kingdon, J. (1997)
IUCN (2015)

West African Elephant *Loxodonta africana cyclotis*

Order – Ungulata
Family – Elephantidae
IUCN Status – Vulnerable
CITES – Appendix I
Average body length – 3 m
Local name – Elephant
Picture – www.arkive.com

Distribution map

General Description
The characteristically large body size, its trunk and tusks makes the elephant completely different from all other animals in Sierra Leone. The tusk can grow up to 1 m in length. The elephant is exclusively herbivorous and may uproot trees during foraging activities and leaves traces of huge feet tramples along its way.

Habitat
The species uses a variety of habitat as long as there is adequate tree cover; thus occurs in woodland savannas, secondary/degraded forests.

Food
Feeds exclusively on plants – grasses, leaves and young stems.

Distribution
Few possibly migrating populations of the elephants are now known only from Outamba-Kilimi NP, around Gola Forest NP and Kangari Hill NHFR. Sightings of elephant in other areas where they use to occur are now hardly reported.

Conservation Issues
The species population has been badly depleted for its valuable tusk, through hunting by hired gangs to kill the animals and extract their tusks. By 1980 the population had dropped to about 5 per cent its 1900 status. Current Conservation intervention is only through the implementation of Wildlife Act, CITES and conservation projects at various sites including the Gola Forests NP and Loma Mountain NP. Species-target conservation action is mainly been focused on population assessment.

References
Kingdon, J. (1997), IUCN (2015)

Giant Pangolin *Smutsia gigantea*

Order – Pholidota
Family – Manidae
IUCN Status – Vulnerable
Average body length – 88 cm
Local name – Big pangolin
Picture – www.arkive.org

Distribution map

General Description
This is the biggest and heaviest of the known living pangolin species. It is easily recognized by its mere size and the arrangement of its scale, which gets thicker darker with the age of the animal. It has very tough elephant-like hind legs, whilst on its four legs has long pointed and inward folding claws, which is generally used to destroy termite and ant colonies when feeding on these insects. The animal's tail usually leaves a heavy drag mark along its path, which experience local people use to indicate its presence in an area.

Habitat
The Giant Pangolin is mainly found in forests, but also occasionally found in grassland in forest areas.

Food
The animal feeds on termites, ants, other insects and larvae

Distribution
It is now very rare and has not been recorded over the last couple of years, even at Gola Forest NP. However, Local inhabitants in areas of Gola Forest NP, Loma Mountains NP and Tingi Hills NHFR indicate its presence.

Conservation Issues
The species population has declined considerably over the past decades because of hunting and trapping by local communities for food and subsistence. Current Conservation intervention is only through the implementation of Wildlife Act, CITES and conservation projects at various sites. No species-target conservation action currently exists.

References
Kingdon, J. (1997),
IUCN (2015)

White-bellied Pangolin *Phataginus tricuspis*

Order – Pholidota
Family – Manidae
IUCN Status – Vulnerable
Average body length – 34 c m
Local name – Pangolin
Picture – www.arkive.org

Distribution map

General Description

This species, also known as Tree Pangolin, is the smallest of the pangolin species in Sierra Leone. Its scales and small, thin and numerous, with pointed serrated edges, which wears out as the animal gets older. The tail is fairly long and there is a patchy white fur on its belly, thus sometimes called White-bellied Pangolin. Both forelimbs and hind limbs have claws, mainly used for tree climbing and breaking through tree barks to get on to termite mounds. It also fees on ants on the ground.

Habitat

Depends on closed forest zones, but forages mostly secondary forest regrowth, including old farmbush.

Food

The animal feeds on termites and ants,

Distribution

Widespread distribution, but more frequently encountered around most forest reserves including Gola Forest NP, Loma Mountain NP, Tingi Hills NHFR, Kambui Hills FR, Kangari Hills NHFR and Nimini Hills FR.

Conservation Issues

Though relatively common around its habitats, the species is mainly threatened by hunting, trapping and slash and burn agriculture. Hunting and trapping is usually for food and subsistence. Current Conservation intervention is only through the implementation of Wildlife Act, CITES and conservation projects at various sites. No species-target conservation action currently exists.

References

Kingdon, J. (1997),
IUCN (2015)

Zebra Duiker *Cephalophus zebra*

Order – Artiodactyla
Family – Antilopinae
CITES – Appendix II
IUCN Status – Near Threatened
Average body length – 80 cm
Local name – Freetambo
Picture – www.arkive.org

Distribution map

General Description
The alternate black and cream zebra-like stripes on the body of the animal is its distinguishing feature and the reason for its name. The rest of the body is pale to dark brown, whilst its extremities have black and brown portions. The animal has short sharp inclined horns fitted between its ears. Zebra duikers are mostly seen in pairs, which are bonded for courtship and the defense of home range and offspring.

Habitat
Occurs mostly in closed forest and associated clearing, bush fallows and montane vegetation.

Food
Feeds mainly on fruits and young foliage

Distribution
Gola Forest NP, Loma Mountains NP, Tingi Hills NHFR, Kambui Hills FR and Kangari Hills NHFR. Nowadays, the animal is hardly seen outside protected forests, although opportunistic encounters occur in community forests.

Conservation Issues
The species population has declined considerably over the past decades because of hunting and trapping by local communities for food and subsistence. Current Conservation intervention is only through the implementation of Wildlife Act, CITES and conservation projects at various sites. No species-target conservation action currently exists.

References
Kingdon, J. (1997)
IUCN (2015)

Guinean Horseshoe Bat *Rhinolophus guineensis*

Order – Chiroptera
Family – –Rhinolophidae
IUCN Status – Vulnerable
Average body length – 5.3 cm
Local name – Bat
Picture – www.arkive.org

Distribution map

General Description
This species of bat is among the groups of small-sized of bats in Sierra Leone. It has a leaf-like horseshoe-shaped protuberance on its nose, from which they release echolocation calls. The hind limbs are poorly developed, but they have broad wings that make them very active fliers. They are dull brown in colour, with no peculiar marks relevant to their identification, except the leafy protuberance on their nose.

Habitat
This species have diverse habitat preferences, inhabiting caves, hollow trees and tree branches. It is widely distributed in the country

Food
This species of bat is insectivorous. It feeds mmainly on insects (mosquito, moths, beetles). Others food items include spiders and scorpions.

Distribution
Gola Forest NP, Loma Mountains NP and Bumbuna Watershed Management Area.

Conservation Issues
Declining population trend mainly due to habitat destruction is the key concern about the conservation status of the species. However, as with other species, its conservation needs are being addressed under various projects and the Wildlife Conservation Act and CITES implementation.

References
Kingdon, J. (1997)
IUCN (2015)

5.3 Near Threatened Forest Mammals

Olive Colobus Monkey *Poliocolobus verus*

Order – Primate (the Apes).
Family – Colobidae
IUCN Status – Near Threatened
Average body length – 47 cm
Local name – Monkey
Picture – www.dpreview.com

Distribution map

General Description
Olive Colobus monkey is one of the species of monkeys that could easily be seen on any good day in a closed forest. It is one of the small-sized monkeys, with upper side greenish olive to brown and underside dull grey. Its whiskers appears white. The rufous colour on its head is an easy identification feature of the species.

Habitat
Associated with degraded areas within closed forest, the species is mostly found on the ground, but can ascend the canopy occasionally to feed on young leaves, buds and flowers.

Food
Exclusively leaves, flowers and buds

Distribution
Gola Forest NP, Loma Mountains NP and Kambui Hills FR.

Conservation Issues
The Olive Colobus Monkey population has suffered mainly from deforestation and hunting for bush meat. It has also suffered from trophy hunting by cultural hunting societies. Conservation intervention has been mainly through implementation of Wildlife Act, CITES and conservation projects at various sites including the Gola forests. No species-target conservation action currently exists

References
Kingdon, J. (1997)
IUCN (2015)

Sooty Mangabey *Cercocebus torquatus*

Order – Primate (the Apes).
Family – Cercopithecidae
IUCN Status – Near Threatened
Average body length – 53 cm
Local name – Monkey
Picture – www.dpreview.com

Distribution map

General Description
Olive Colobus monkey is one of the species of monkeys that could easily be seen on any good day in a closed forest. It is one of the small-sized monkeys, with upper side greenish olive to brown and underside dull grey. Its whiskers appears white. The rufous colour on its head is an easy identification feature of the species.

Habitat
Widespread habitat distribution, but particularly close canopy gallery and degraded forest. Also sometimes found in close association with human settlements and farmlands

Food
Fruits and nuts; leaves, shoots, stems and roots; could raid farms to feed on rice

Distribution
Most population found in Gola Forest NP, Loma Mountains NP and Kambui Hills FR, Western Area Peninsula Forest NP.

Conservation Issues
Its population is declining due to hunting and poaching pressures. Its gregarious and ground-foraging habits especially around farmlands easily expose them to trapping. Intervention has been mainly through implementation of Wildlife Act, CITES and conservation projects at various sites including the Gola forests.
No species-target conservation action currently exists.

References
Kingdon, J. (1997)
IUCN (2015)

Leopard *Panthera pardus*

Order – Carnivora
Family – Felidae
IUCN Status – Near Threatened
CITES – Appendix I
Average body length – 120 cm
Local name – Lepet
Picture – www.arkive.com

Distribution map

General Description
The Leopard is among the most known of all cat species in Sierra Leone, especially among the old rural population. It is a large cat with characteristic black and brown rosette-like spots all over the body, except on the face belly and lower limbs where spots become solid black. They occur in zones where heavy forest cover is interrupted by open areas.

Habitat
Closed canopy forest and montane forests

Food
Medium to large mammals (monkeys to antelopes), rodents, birds, and even large arthropods.

Distribution
The known populations of Leopard are restricted to closed forest and montane vegetation at Loma Mountain NP, Gola Forest NP Tingi Hills NHFR. Anecdotally, the Western Peninsula Forest leopard population went extinct in the 1980s.

Conservation Issues
The species population is declining due to hunting and habitat loss. Conservation intervention is through the implementation of Wildlife Act, CITES and conservation projects at various sites including the Gola Forests NP and Loma Mountain NP. No species-target conservation action currently exists.

References
Kingdon, J. (1997)
IUCN (2015)

Bongo *Tragelaphus euryceros*

Order – Artiodactyla
Family – Bovinae
IUCN Status – Near Threatened
Average body length – 2.04 m
Local name – Bongo
Picture – www.arkive.org

Distribution map

General Description
The Bongo is an ungulate with an elongated antelope-like body structure, with brownish red hairs interrupted by white stripes. Its extremities have black and white markings, which gets darker as the animal grows older. Its horns are prominent, inclined backwards with some twisting. Bongos occur singly most of the time, except in courtship and mother-suckling bonds.

Habitat
Degraded zones and bush fallows associated with forest reserves.

Food
They feed mainly on the foliage of young trees, shrubs and grass. Favorite plants include *Albizia* seedlings and the vines of wild yam *Dioscorea mutiflora*

Distribution
May be present in very dispersed locations, but more certainly in the Gola Forest NP, Loma Mountains NP and Tingi Hills NHFR.

Conservation Issues
This species is highly susceptible to hunting and trapping by local farming communities for food and subsistence. Thus, its numbers have declined considerably over the last couple of decades. Current Conservation intervention is only through the implementation of Wildlife Act, CITES and conservation projects at various sites. No species-target conservation action currently exists.

References
Kingdon, J. (1997)
IUCN (2015)

Straw-coloured Fruit Bat *Eidolon helvum*

Order – Chiroptera
Family – –Pteropodidae
IUCN Status – Near Threatened
Average body length – 17 cm
Local name – Bat
Picture – www.arkive.org

Distribution map

General Description

The Straw-coloured Fruit Bat is one of the largest fruit bat in Sierra Leone. These bats are yellowish brown in colour from neck to back whilst their undersides are olive green to brown as the animal ages. The body colours are generally brighter in males than females. Their cheeks, eyes and ears are large and the wings spans up to 76 cm. These bats are highly social and they live and migrate in groups of over 100,000 individuals.

Habitat

The species is widespread across forest and savanna zones all over the country.

Food

They feed mainly on fruits, tree bark, flowers, leaves and nectar, and so serve as a major pollination and dispersal agent for the plant they feed on.

Distribution

The species has been recorded in nearly all forest and savannah areas surveyed, including Outamba-Kilimi NP, Western Areas Peninsula NP, Gola Forest NP, Loma Mountains NP and Bumbuna WMA.

Conservation Issues

Declining population trend is the reason for IUCN to consider the species as Near Threatened. In Sierra Leone, the species is relatively common and so is of no conservation concern. However, as with other species, its conservation needs are being addressed under various projects and the Wildlife Conservation Act.

References

Kingdon, J. (1997)
IUCN (2015)

Tear-drop fruit bat *Scotonycteris ophiodon*

Order – Chiroptera
Family – –Pteropodidae
IUCN Status – Near Threatened
Average body length – 6.2 cm
Local name – Bat
Picture – www.arkive.org

Distribution map

General Description
This species of bat is little known. Its prominent tear-like white spots on either sides of the eyes is the most important feature for identification; white spots also occur on its face and lower jaw to throat. Its back is reddish brown, whilst its wings are dark grey. These bats roost singly or in small groups over in shady vegetation.

Habitat
The Tear-drop Fruit Bat occurs in lowland rainforest and found at the lower levels of forest undergrowth.

Food
They feed mainly on fruits, tree bark, flowers, leaves and nectar, and so serve as a major pollination and dispersal agent for the plant they feed on.

Distribution
Mainly restricted to the Gola Forest NP and Tiwai Island WS.

Conservation Issues
The population status and distribution of this species is really unknown. There is need for national surveys to establish a reliable baseline for this and other bat species of global conservation concern. The species' conservation needs are being addressed under various site conservation projects/programmes such as Gola Forest NP and the Wildlife Conservation Act.

References
Kingdon, J. (1997)
IUCN (2015)

5.4 Data Deficient Forest Mammals

Water Chevrotain *Haemoschus aquaticus*

Order – Artiodactyla
Family – Tragulidae
IUCN Status – Data Deficient
Average body length – 81 cm
Local name – xxx
Picture – www.arkive.org

Distribution map

General Description
This species of ruminant has the appearance of a deer, but are smaller in size and has a short fluffy tail. Their body colour is neatly reddish brown, with white stripes running horizontally from shoulder to tail, and vertical stripes on the back. When standing upright the body of the animal slopes downward towards its anterior end, because the back has tougher muscles and is higher than the front. The forward slopping nature of its body allows the animal to navigate through dense bush when foraging.

Habitat
The species appears to be restricted to closed canopy lowland forest.

Food
Fallen fruits (including figs, palm nuts, breadfruit), insects, crabs, scavenged meat and fish.

Distribution
It has been recorded at Gola Forest NP, but was not encountered in recent surveys. It is also suspected to occur at Kambui Hills FR, Loma Mountains NP

Conservation Issues
The Water Chevrotin is threatened by deforestation through logging and general forest clearing. There is no data on its population status, but encounter rates are very low. Current Conservation intervention is only through the implementation of Wildlife Act, CITES and conservation projects at various sites.

References
Kingdon, J. (1997)
IUCN (2015)

SECTION SIX
THREATENED AND RARE FOREST AVIFAUNA

6.1 Endangered Forest Avifauna

Rufous Fishing owl *Scotopelia ussheri*

Order – Strigiformes
Family – Strigidae
IUCN Status – Endangered
CITES – Appendix xxx
Local Status – UGF Endemic
Average body length – 47 cm
Local name – Owl
Picture – www.pbase.com

Distribution map

General Description
This species is a medium size owl, but much bigger than most passerine birds. Its body is mostly pale brown (or rufous) with fine streaks on the breast and belly, whilst the primary feathers are darker. Its eyes are big round and dark against a pale brown face. The bird is hardly seen during the day and the most reliable indication of its presence at night, is its single deep drawn-out wailing hoot at one minute intervals, which is usually used to locate it. It usually perches on a tree branch in a gallery forest over a stream/small river, whilst hunting at night, occasionally flying over water from one tree branch to another. Its population size is unknown, but is assumed to be very low because of its very rare encounter rates.

Habitat
Gallery forests along rivers (may include mangrove); and rivers with closed canopy forests.

Food
Feeds mainly on fish and sometimes small mammals

Distribution
Loma Mountain NP, the Gola Forest NP and Tiwai Island WS.

Conservation Issues
The species is threatened by habitat destruction and degradation through clearance for agriculture and mining. The improved conservation status of Gola Forest and Loma Mountains to national parks is very critical to the survival of the species in Sierra Leone. No species-targeted conservation action exist, but it has a special protection status in the national Wildlife Conservation Act and covered under the implementation of the CITES Convention.

References
Borrow & Demey (2008), IUCN (2015)
BirdLife International (2015)

Gola Malimbe *Malimbus balmanni.*

Order – Passeriformes
Family – Ploceidae
IUCN Status – Endangered
CITES – Appendix xxx
Local Status – UGF Endemic
Average body length – 17 cm
Local name – xxx
Picture – www.arkive.org

Distribution map

General Description
This species is among the attractive lowland primary forest weavers, which was only relatively recently described. Its distinct yellow breast to nape and a yellow vent against the rest of the body that is black is unmistakable. The yellow colour extends to the nape in males, whilst the juvenile has yellow to cinnamon crown and pale bill. It has occasionally been observed in mixed bird parties.

Habitat
Inhabits the mid-story of the forest (8 – 20 m high), usually seen searching through thick tangles of liana foliage on tree branches.

Food
Seeds of cereal plants and small fruits

Distribution
Gola Forest NP; no evidence yet that it occurs in other forest areas

Conservation Issues
The species is highly dependent on lowland primary forest. The fact that it has only recently been described could indicate that the species is a neo-endemic in the Upper Guinea Forest. Its continued survival depends primarily on the conservation of the Gola forest NP. Habitat degradation and destruction, particularly from logging and woodcutting and agriculture are the key threats to the species. Its conservation needs are being addressed through site-base conservation action at the Gola Forest NP. In addition, the species has a special protection status in the Wildlife Conservation Act and the implementation of CITES. No species target conservation action currently exists.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

6.2 Vulnerable Forest Avifauna

White-breasted Guineafowl *Agelastes meleagrides*

Order – Galliformes
Family – Numididae
IUCN Status – Vulnerable
CITES – Appendix xxx
Local Status – UGF Endemic
Average body length – 43 cm
Local name – Guineafol
Picture – www.arkive.com

Distribution map

General Description
This species is one of the largest, but most rare and globally threatened forest birds in Sierra Leone. Its red hairless head and white breast to shoulders are the characteristic identifiable features of the adult bird; the rest of the body is black. It has a very patchy population, with only few sightings of a couple of individuals seen, sometimes in mixed parties with Crested Guineafowl *Guttera pucherani*. They occupy large territories of between 15-30 birds, but with smaller foraging groups of a couple of birds that constantly move around searching for food.. They breed by laying up to about a dozen eggs in nests built on the ground, protected by thick undergrowth.

Habitat
Thin undergrowth in primary lowland forests, is the main habitat. Recently sighted in a cocoa plantation around Gola Forest NP.

Food
They feed on anything ranging from animal to plant material. Commonly found on the ground beneath a fruiting tree.

Distribution
Gola Forest NP and Tiwai Island WS

Conservation Issues
Habitat destruction, particularly through timber exploitation, and hunting are the main threats to the species survival. However, its inability to adapt to forest degradation is an evolutional challenge to the species. The improved protection status of the Gola forest as a national park is very vital to the survival of the species. In addition, the species has a special protection status in the national Wildlife Conservation Act and is covered under CITES Convention. No species-target conservation action currently exists.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Grey Parrot *Psitacus erithacus*

Order – Psittaciformes
Family – Psittacidae
IUCN Status – Vulnerable
CITES – Appendix II
Local Status – Forest rarity
Average body length – 34 cm
Local name – Polly
Picture – www.lynxeds.com

Distribution map

General Description
The Grey Parrot is a rare but well known species among local communities, because it is a target of national and international pet trade. It is the largest of the parrot species in West Africa, with a unique grey plumage, contrasting paler grey rump. Its bright scarlet tail is unmistakable and is conspicuous in flight. The primary feathers are blackish grey and pale fringes on the feathers, gives the body a scaly appearance. The head appears bright grey and bare areas around the eyes are white; the bill is short tough with the upper mandible bigger and having a sharp decurved tip. The sexes are similar, but the juvenile has paler and indistinct plumage.

Habitat
Closed forest canopy, but also gallery forest, mangrove forest and wooded savanna.

Food
Mainly ground level insects and other invertebrates

Distribution
Gola Forest NP, Loma Mountains NP, Bumbuna WMA and Kambui Hills FR.

Conservation Issues
The species is mainly threatened by forest degradation and deforestation and trapping for the pet trade. Grey Parrots are the main target of the bird pet trade in West Africa and so the species has suffered greatly from the activities. It is now rarely encountered. Conservation action for Grey Parrots includes nation-wide monitoring and population assessments, site-base conservation action at the Gola Forest NP and the implementation of CITES.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Brown-cheeked Hornbill *Bycanistes cylindricus*

Order – Coraciiformes
Family – Bucerotidae
IUCN Status – Vulnerable
CITES – Appendix xxx
Local Status – UGF Endemic
Average body length – 71 cm
Local name – Hornbill
Picture – ibc.lynxeds.com

Distribution map

General Description
This species is a large, stout forest hornbill, whether perching of in flight displays distinct black and white plumage pattern: black on head to back and upper wings, white on lower wings to rump and belly, black and white on upper to lower tail, respectively. The bill and casque are dark yellow and eye ring is red against deep brown cheeks, from which it gets its name. It is similar to Black-and-white Casqued Hornbill *Bycanistes subcylindricus*, but the bill in the latter is black and tail plumage is different.

Habitat
Close canopy primary forests

Food
Mainly fruits and seeds

Distribution
Loma Mountains NP, Gola Forest NP, Tingi Hills NHFR, Kangari Hills NHFR and Kambui Hills FR

Conservation Issues
The main threat to the species is habitat destruction and degradation through clearance for agriculture and mining. The improved conservation status of Gola Forest and Loma Mountains to national parks is very critical to the survival of the species in Sierra Leone. The species has a special protection status in the national Wildlife Conservation Act. No species-target conservation action currently exists.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Yellow-casqued Hornbill *Ceratogymna elata*

Order – Coraciiformes
Family – Bucerotidae
IUCN Status – Vulnerable
CITES – Appendix xxx
Local Status –
Average body length – 80 cm
Local name – Hornbill
Picture – www.rockjumperbirding.com

Distribution map

General Description
This species is among the largest and robust forest hornbills in Sierra Leone. Its body plumage is generally black, except for off-white edges on the tail, pale blue wattle against brown and white feather on the throat; and most typically, its yellow/creamy casque carried on a black bill. The females and juveniles may have variations in their casque and wattle size and colour. It is the only hornbill that produces a swishing wing sound against the wind whilst in active flight. It calls with a far-crying resonant nasal trumpeting sound. It is usually encountered in pairs or small family parties on mature forest canopy.

Habitat
Closed canopy forests, gallery forests, forest edges, and occasionally in forest patches in open areas.

Food
Fruits and seeds

Distribution
Gola Forest NP, Loma Mountains NP, Western Area Peninsula Forest NP, Tingi Hills NHFR, Kangari Hills NHFR, Kambui Hills FR Nimini Hills FR and Outamba-Kilimi NP.

Conservation Issues
Hunting and habitat destruction are the main threats to the species in Sierra Leone. The birds tend to tolerate habitat degradation and so have been found in various locations outside forest reserves. There is no species-targeted conservation action, but it has a special protection status in the Wildlife Conservation Act and is covered in the implementation of the CITES Convention.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Western Wattled Cuckoo-shrike *Campephaga lobata*

Order – Passeriformes
Family – Campephagidae
IUCN Status – Vulnerable
CITES – Appendix xxx
Local Status – UGF Endemic
Average body length – 19 cm
Local name – xxx
Picture – xxx

Distribution map

General Description
The Western Wattled Cuckoo Shrike is a species of the size of the Common Greenbul. Its head to face and neck is black with a bright orange wattle below the eyes to mouth. The breast to belly is also orange, but its back and secondary feathers are olive green. The bird is very little known because it is relatively small and is dependent on undisturbed lowland primary forest, which in only found in the Gola Forest NP. Thus, it has only been recorded in the Gola Forest NP. It is usually seen foraging singly or in pairs

Habitat
The canopy of closed primary forests.

Food
Feeds on caterpillars, grasshoppers and small seeds.

Distribution
Gola Forest NP; encounter rates very rare.

Conservation Issues
The Western Wattled Cuckoo-shrike is highly threatened by habitat destruction, as its UGF range has steadily contracted with the contraction of the primary forest range. No species-targeted conservation action exists, but it has a special protection status in the Wildlife Conservation Act and is covered in the implementation of the CITES Convention.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Green-tailed Bristlebill *Bleda eximius*

Order – Passeriformes
Family – Pycnonotidae
IUCN Status – Vulnerable
CITES – Appendix xxx
Local Status – UGF Endemic
Average body length – 22 cm
Local name – xxx
Picture – Nick Borrow

Distribution map

General Description
The bristlebills are generally similar to the greenbuls, but are slightly larger, have more pronounced and tougher bills, with bristles on the top of the proximal end of the bill. Green-tailed Bristlebill is slightly larger than the common bulbul. Its head to back and tail are olive green, with yellow tip at the end of the tail, whilst its neck to belly and vent are pale yellow. The species is very cryptic, but can be vocal especially at dawn. It is usually found singly in dense foliage of forest understory.

Habitat
The dense understory foliage of close canopy forests.

Food
Mainly insects, especially ants

Distribution
Gola Forest NP, the Western Area Peninsular Forest NP, Kangari Hills NHFR, Kambui Hills FR and Nimini Hills FR.

Conservation Issues
The species is one of the Upper Guinea forest endemics and has been recorded in most of the protected forest in middle to southern parts the country, including the Gola Forest NP, the Western Area Peninsular Forest NP, Kangari Hills NHFR and Kambui Hills FR. It survives among the foliage of the understory of closed canopy forests. No species-target conservation action currently exists.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Lagden's Bush-shrike *Malaconotus lagdeni*

Order – Passeriformes
Family – Malaconotidae
IUCN Status – Vulnerable
CITES – Appendix xxx
Local Status – Very rare
Average body length – 24 cm
Local name – xxx
Picture – www.leesbird.com

Distribution map

General Description
This species is one of the little known bush shrikes, because it is restricted to closed canopy primary forest. It is a relatively large forest passerine, with grey head, streaked yellow and black wings and wing coverts feathers, deep yellow throat to belly and vent and a large bill. As with most other bush shrikes, the Lagden's Bush-Shrike is vocal, with various melodious hoots and whistles, with distinctive variation typical of the species.

Habitat
Typically found associated with the canopy in closed canopy lowland forest.

Food
Mainly flying insects and other invertebrates.

Distribution
Gola Forest NP; no evidence yet of its occurrence in other closed canopy forests in the country.

Conservation Issues
Habitat degradation and destruction through logging and woodcutting are the key threats to the species. No species-targeted conservation action exists, but its conservation needs are being addressed through implemented the conservation programme at Gola Forest NP. In addition the species has a special protection status in the Wildlife Conservation Act and is covered in the implementation of the CITES Convention.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

White-necked Picathartes *Picathartes gymnocephalus*

Order – Passeriformes
Family – Picathartidae
IUCN Status – Vulnerable
CITES – Appendix I
Local Status – UGF Endemic
Average body length – 38 cm
Local name – xxx
Picture – www.leesbird.com

Distribution map

General Description
This species is considered a flagship for bird conservation in Sierra Leone, as is the main feature of the logo of the Gola National Park. It looks very much like a thrush or a slender crow, has a distinct black body and white underparts; its entire neck is white, its head is bald, with yellow on both sides and black on the crown. It is mostly silent, except for occasional alarm calls.

Habitat
Depends on the availability of suitable nesting rock in a relatively undisturbed forest, usually close to a stream, for nesting and breeding; has been found foraging in degraded forests

Food
Snails, earthworms and insects.

Distribution
Loma Mountains NP, Tingi Hills NHFR, Western Area Peninsular Forest NP, Kangari Hills NHFR, Kambui Hills FR, Gola Forest NP and Nimini Hills FR.

Conservation Issues
The limited distribution in its preferred habitat is probably the reason for the species' inability to expand its range, which also renders it vulnerable to local extinction in the event of any serious disturbance. Habitat degradation and destruction through logging and woodcutting and agriculture are the key threats to the species. A number of species-target conservation action exists at Gola Forest NP, and Western Area Peninsular Forest NP and Kambui Hills FR. In addition the species has a special protection status in the Wildlife Conservation Act and the implementation of CITES.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Sierra Leone Prinia *Schistolais leontica.*

Order – Passeriformes
Family – Sylviidae
IUCN Status – Vulnerable
CITES – Appendix
Local Status – UGF Endemic
Average body length – 13 cm
Local name – xxx
Picture – xxx

Distribution map

General Description
This species is considered a flagship for bird conservation in Sierra Leone, as is the main feature of the logo of the Gola National Park. It looks very much like a thrush or a slender crow, has a distinct black body and white underparts; its entire neck is white, its head is bald, with yellow on both sides and black on the crown. It is mostly silent, except for occasional alarm calls.

Habitat
Dense vegetation along gallery forest edges and gullies in hilly areas, especially between 700-1600 m asl. Thrives in openings and dense vegetation created by natural disturbance in mature close forest.

Food
Feeds mainly on flying insects.

Distribution
The most viable population of the species is on the Loma Mountain NP; also recorded at Tingi Hills NHFR and Kambui Hills FR; record of the species in the forests at Bumbuna is uncertain.

Conservation Issues
The species habitat specialty could be the reason for the species' inability to expand its range, which also renders it vulnerable to local extinction in the event of any serious anthropogenic disturbance. Habitat degradation and destruction through logging and woodcutting are the key threats to the species., but its conservation needs are being addressed through the establishment of a national park at Loma Mountains. In addition the species has a special protection status in the Wildlife Conservation Act and the implementation of CITES. No species target conservation action exists.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Nimba Flycatcher *Malaenornis annamarulae*

Order – Passeriformes
Family – Muscicapidae
IUCN Status – Vulnerable
CITES – Appendix xxx
Local Status – UGF Endemic
Average body length – 19 cm
Local name – xxx
Picture – www.hbw.com

Distribution map

General Description
The Nimba Flycatcher is one of the threatened species that have not attracted much attention from ornithologist, probably because of its unattractive colour. It is a robust, metallic black bird almost the same size as Northern Black Flycatcher, but with a shorter tail. It is usually encountered in groups of 4-6 birds, though could be seen in pairs during their breeding season. They are often noticed from tree tops and from their short varied calls of pleasant melodious whistles.

Habitat
The interior of primary closed canopy lowland forest

Food
They feed on insects caught on the wings or taken from cracks and mosses on the branches of forest trees.

Distribution
Gola Forest NP; no evidence yet that it occurs in other forest areas

Conservation Issues
The species is highly specific lowland primary forest habitat specific and so its conservation need is specific to the conservation of the Gola forest. Habitat degradation and destruction, particularly from logging and woodcutting are the key threats to the species. Its conservation needs are being addressed through site-base conservation action at the Gola Forest NP. In addition, the species has a special protection status in the Wildlife Conservation Act and the implementation of CITES. No species target conservation action currently exists

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

6.3 Near Threatened Forest Avifauna

Crowned Eagle *Stephanoaetus coronatus*;

Order – Falconiformes
Family - Accipitridae
IUCN Status – Near Threatened
CITES – Appendix xxx
Average body length – 90 cm
Average wing span – 184 cm
Local name – Eagle
Picture – www.homa-ngo.blogfa.com

Distribution map

General Description
The Crowned Eagle is one of the largest and most powerful, among its conspecifics. It has broad round wings with a span of up to about two meters, and a long tail. The adult males have dark brown head and throat, the upperparts blackish-brown and the underparts is boldly barred, black- and-rufous on the chest and black-and-white belly to rump. Females are slightly larger, with more heavily barred underparts. The bill is black and the feet are yellow. The juveniles are pale with indistinct plumage, but white head and underparts. In flight, which is usually interspersed by undulating patterns at great heights, the adult displays broad wings, dark head and rufous anterior underparts; paler in the juveniles.

Habitat
Close canopy forest and gallery forest and their fringes
Food

Distribution
Gola Forest NP, Loma Mountains NP, Kangari Hills NHFR and Kambui Hills FR.

Conservation Issues
Habitat destruction, particularly timber exploitation, and hunting are the main threats to the species survival. The improved protection status for the Gola forest NP and Loma Mountains NP is very vital in protecting the species from local extinction. In addition, the species has a special protection status in the national Wildlife Conservation Act and is covered under CITES Convention. No species-target conservation action currently exists.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Blue Mustached Bee-eater *Merops mentalis*

Order – Passeriformes
Family – Meropidae
IUCN Status – Near Threatened
CITES – Appendix xxx
Local Status – Very rare
Average body length – 19 cm
Local name – Bea eater
Picture – ibc.lynxeds.com

Distribution map

General Description

This species is a subspecies of Blue-headed Bee-eater *Merops muelleri*. Its plumage is deep purple blue on its head and chest, blue on its face and belly, and deep chestnut on its mantle, back and wings. The bill is black, slightly long and decurved and there is a patch of on its throat. The tail, which it wags in a short arc, is blue and black, with short blunt tail streamers in the adult. It is usually seen in pairs or small group perching on thin branches and lianas in the mid-stratum of mature forests.

Habitat

The mid-stratum of close canopy forests

Food

Flying insects and caterpillars

Distribution

Loma Mountains NP, Tingi Hills NHFR, Gola Forest NP and Kambui Hills FR.

Conservation Issues

The main threat to the species is habitat destruction and degradation through clearance for agriculture and mining. The improved conservation status of Gola Forest and Loma Mountains to national parks is very critical to the survival of the species in Sierra Leone. No species-targeted conservation action exists, but it has a special protection status in the national Wildlife Conservation Act.

References

Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Rufous-winged Illadopsis *Iladosis rufescens*

Order – Passeriformes
Family – Timaliidae
IUCN Status – Near Threatened
CITES – Appendix xxx
Local Status – UGF Endemic
Average body length – 17 cm
Local name – xxx
Picture – www.catsclem.nl

Distribution map

General Description
This is one of the cryptic, but degradation tolerant forest dependent species. It is small-sized bird, slightly bigger than finches, with dull grey body and rufous at the primary feathers. It is also an understory bird, mostly found singly and is usually heard calling at dawn. It has frequently been recorded in secondary forest contiguous with pristine forest conditions, but can easily be misidentified for Pulvel's Illadopsis *Illadopsis pulvescens*, because of their very similar size and calls.

Habitat
Thicket in the understory of a primary or secondary forests

Food
Mainly insects and other invertebrates.

Distribution
Loma Mountains NP, Tingi Hills NHFR, Western Area Peninsular Forest NP, Kangari Hills NHFR, Kambui Hills FR, Gola Forest NP and Nimini Hills FR.

Conservation Issues
Habitat degradation and destruction through logging and woodcutting are the key threats to the species. Tts conservation needs are being addressed through various conservation programme at Gola Forest NP, Loma Mountains NP and Western Area Peninsular Forest NP. In addition the species has a special protection status in the Wildlife Conservation Act. No species-target conservation action currently exists.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Black-capped Rufous Warbler *Bathmocercus cerviniventris*

Order – Passeriformes
Family – Sylviidae
IUCN Status – Near Threatened
CITES – Appendix xxx
Local Status – UGF Endemic
Average body length – 13 cm
Local name – xxx
Picture – www.taenos.com

Distribution map

General Description
This is another interesting species of warbler that has attracted attention from a number of national and expatriate ornithologists. It is a small bird, usually found in forest thicket near a stream, as single individual, though seldom seen in pairs during the breeding season. It is black from head to face and neck, rufous from wings to tail and yellowish-brown on its belly to vent. Its distinct and vocal call (with a couple of variations) is the most reliable indication of its presence as the bird is normally difficult to spot.

Habitat
Dense bush in closed forest frequently close to a stream.

Food
Insects and earthworms.

Distribution
Loma Mountain NP, Tingi Hills NHFR, Gola Forest NP, Ferengbaia FR and Bumbuna WMA

Conservation Issues
The species tends to tolerate degradation, which is a very helpful feature to its long-term survival. Habitat degradation and destruction, particularly from agriculture and woodcutting are the key threats to the species. Its conservation needs are being addressed through site-base conservation action at Loma Mountaians NP, Gola Forest NP and the Bumbuna Watershed Management Project. In addition, the species has a special protection status in the Wildlife Conservation Act and the implementation of CITES. No species target conservation action currently exists

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Copper-tailed Glossy Starling *Lamprotornis cupreocauda*

Order – Passeriformes
Family – Sturnidae
IUCN Status – Near Threatened
CITES – Appendix xxx
Local Status – UGF Endemic
Average body length – 20 cm
Local name – xxx
Picture – www.carolinabirds.org

Distribution map

General Description
This glossy starling species is one of the smallest among the glossy starlings species. It is glossy purple from head to breast and the rest of the body is glossy blue-black. Its bright yellow eye and dark glossy bronze tail are its characteristic features for ease of identification. The juvenile is dull with dark eyes. The bird is mostly encountered in pairs or groups of up to a dozen individuals, flying from the canopy of one tree to another.

Habitat
Inhabits the canopy of lowland to mid-altitude closed canopy forests; have been recorded in degraded forest.

Food
They feed on flying insects, especially termites.

Distribution
Gola Forest NP, the Loma Mountains NP, Tingi Hills NHFR, Kambui Hills FR, Bumbuna WMA and Ferengbaia FR.

Conservation Issues
The species is highly susceptible to logging as it depends on the canopy to survive; agriculture and woodcutting are also contributing factors. Its conservation needs are being addressed through site-base conservation action at the Gola Forest NP and Loma Mountains NP. In addition, the species has a special protection status in the Wildlife Conservation Act and the implementation of CITES.
No species target conservation action currently exists.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

6.4 Data Deficient Forest Avifauna

Baumann's Greenbul *Phyllastrephus baumanni*

Order – Passeriformes
Family – Pycnonotidae
IUCN Status – Data Deficient
CITES – Appendix xxx
Local Status – Very rare
Average body length – 18 cm
Local name – xxx
Picture – www.pinterest.com

Distribution map

General Description
Though considered data deficient by IUCN, this species is one of the most rare of the greenbuls in the country. The bird is olive brown on its head to back and wings, pale olive green from throat to vent and a rusty tail. It moves around as a singly bird, but hide among the foliage most of the time. Because its colour mimics its habitat, the bird is difficult to identify in the forest and mastering its call is the easiest way to notice its presence.

Habitat
The understory of lowland to mid altitude closed canopy forests and gallery forests.

Food
Mainly insects and other invertebrates.

Distribution
Gola Forest NP, Loma Mountains NP and Tingi Hills NHFR.

Conservation Issues
Habitat loss from general forest clearing, logging and woodcutting are the key threats to the species. The species has a special protection status in the Wildlife Conservation Act and is covered in the implementation of the CITES Convention. No species-target conservation action currently exists

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Yellow-bearded Greenbul *Criniger olivaceus*

Order – Passeriformes
Family – Pycnonotidae
IUCN Status – Data Deficient
CITES – Appendix
Local Status – UGF Endemics
Average body length – 18 cm
Local name – xxx
Picture – www.ibc.lynxeds.com

Distribution map

General Description
The Yellow-bearded Greenbul is generally has an olive-green head and upper parts, with a characteristic bright yellow throat to beard, and a slight pale yellow belly. It has a dull eye ring and its body size is just similar to that of the Common Bulbul. It is a forest understory to mid story species, which requires undisturbed closed canopy forest conditions to survive.

Habitat
Mostly found among loose foliage in low to mid story of lowland to mid altitude closed canopy primary forest.

Food
Mainly insects and other invertebrates.

Distribution
Gola Forest NP and Loma Mountains NP.

Conservation Issues
Habitat degradation and destruction through logging and woodcutting are the key threats to the species. No species-targeted conservation action exists, but its conservation needs are being addressed under the respective project being implemented at the Gola Forest NP and the Loma Mountains NP. In addition the species has a special protection status in the Wildlife Conservation Act and is covered in the implementation of the CITES Convention. No species-target conservation action currently exists

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

Yellow-footed Honeyguide *Melignomon eisentrauti*

Order – Piciformes
Family – Indicatoridae
IUCN Status – Data Deficient
CITES – Appendix xxx
Local Status – Rare
Average body length – 14.5 cm
Local name – xxx
Picture – www.surfbirds.com

Distribution map

General Description
This species has the size and shape of a small greenbul, but it is slightly more sturdy, with slender yellowish bill and typically yellowish legs. The head is olive on top and greyish on its sides. Its undertail coverts and vent are off-white, whilst the tail is slightly broad, the top-side being white on the flanks and a black bar in the middle. Its underparts (neck to belly) are greyish to olive, and the back and wings are generally olive-brown, with darker stripes on primary and secondary feathers. The juvenile is generally pale.

Habitat
Mid-strata to canopy of primary and secondary closed canopy lowland forests.

Food
Insects found among leaves and branches.

Distribution
Gola Forest NP and Tiwai Island WS

Conservation Issues
The species has a very restricted distribution and has only been recorded in low numbers, so the conservation of the lowland forests in the south-east of the country is vital to its survival. It is mainly threatened by habitat destruction. No targeted conservation action for the species exists, but it is being protected through conservation programmes at Gola Forest NP and Tiwai Island WS, and has a special protection status in the Wildlife Conservation Act.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

6.5 Other Rare Forest Avifauna

Many-coloured Bush-shrike *Malaconotus multicolor*

Order – Passeriformes
Family – Malaconotidae
IUCN Status – Least Concern
Local Status – Dispersed, but rare
Average body length – 20 cm
Local name – xxx
Picture – www.ibc.lynxeds.com

Distribution map

General Description
This species is one of the most brightly coloured and beautiful forest bird species. The plumage of males and females vary only slightly, except for the breast, which vary in colour; in males the breast can be scarlet, orange or black, whilst the female's breast is usually orange. The crown and mantle is grey, whilst the forehead may have variable amount of white. The rest of the upper parts are green, with the flight feathers having yellow tips. The tail is green with black and broad yellow or reddish tips depending on age and sex. Its repeated single melodious resonating whistle from the canopy, is the key indication of its presence.

Habitat
forest canopy species, tending to hide among the tiny branches and foliage, thus is difficult to observe, despite its bright colour.

Food
Feeds on insects, especially ants and termites on trees.

Distribution
Gola Forest NP, Loma Mountains NP, Western Area Peninsula Forest NP, Tingi Hills FR, Kangari Hills FR and Kambui Hills FR.

Conservation Issues
Habitat degradation and deforestation are the main threat to the species. It is considered an uncommon and rare forest species across its Upper Guinea Forest range. No species target conservation action exists, but its conservation needs are being addressed through site-base conservation action at the Gola Forest NP, Loma Mountains NP and Western Area Peninsula Forest.

References
Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

African Pitta *Pitta angolensis*

Order – Passeriformes
Family – Pittidae
IUCN Status – Least Concern
Local Status – Forest rarity
Average body length – 20 cm
Local name – xxx
Picture – www.arkive.org

Distribution map

General Description

The African Pitta, also known as Angola Pitta, is a brightly coloured forest understory, thrush-like species. Its plumage is very attractive, but with duller colours in the juveniles. The cap of the head is black, with a broad buff gold supercilium, broad black eye patch, running from base of bill to back of head; the throat is pinkish and the bill is mostly black. The breast is cinnamon and the belly to undertail coverts is red. The upper part is dark green, with turquois-blue patches on the shoulder, wings and rump; the tail is short and black. Despite its colour, the species is very difficult to see because it is rare and cryptic in behavior, even when foraging.

Habitat

Found in the understory of close canopy primary and mature secondary forests

Food

Mainly ground level insects and other invertebrates

Distribution

Gola Forest NP, Loma Mountains NP, Bumbuna WMA and Kambui Hills FR.

Conservation Issues

The species is mainly threatened by forest degradation and deforestation. It is very rarely encountered and a number has been seen in capativity. No species target conservation action exists, but its conservation needs are being addressed through site-base conservation action at the Gola Forest NP and Loma Mountains NP.

References

Borrow & Demey (2008)
IUCN (2015)
BirdLife International (2015)

SECTION SEVEN
THREATENED AND RARE FOREST REPTILES

7.1 Critically Endangered Forest Reptiles

Slender-snorted Crocodile *Mecistops cataphractus*

Order – Crocodylia
Family – Crocodylidae
IUCN Status – Critically Endangered
CITES – Appendix I
Average body length – 3.8 m
Local name – Frog
Picture – www.arkive.org

Distribution map

General Description
Considered as shy and timid, this species of crocodile is a remarkable swimmer, but usually seen resting in the shade of trees along a forested river. It is among the least known crocodile species in the country, but can easily be distinguished from other crocodile species by its slender pointed snort. The adults have a scaly and leathery brownish yellow skin with large rather evenly spaced black rows of spots running horizontally down to the tail. The head is olive in colour with dark brown spots. Its underside is bright yellow with several dark patches. The juveniles are greenish-grey to greenish-yellow in colour with black blotches and markings Males are bigger than females.

Habitat
They inhabit close canopy riverine forest and forested fringes of lakes. They also occur in dense woodland near water, and in brackish lagoons.

Food
Feeds mainly on fish, but also eats frogs, snakes, shrimps, crabs, and even waterbirds and mammals

Distribution
Bumbuna WMA, possibly Tiwai Island WS and Gola Forest NP

Conservation Issues
The population of the species in the country is assumed to be declining due to habitat loss to deforestation-related human activities and hunting for its meat and valuable skin. There is need to establish a population status for the species through surveys in selected potential forest reserves. There is no conservation plan for the species, but it is covered under the implementation of the Wildlife Conservation Act and CITES.

References
Crocodile Specialist Group (1996)
IUCN (2015)

7.2 Vulnerable Forest Reptiles

Dwarf Crocodile *Osteolaemus tetraspis*

Order – Crocodylia
Family – Crocodylidae
IUCN Status – Vulnerable
CITES – Appendix 1
Average body length – 1.9 m
Local name – Frog
Picture – www.arkive.org

Distribution map

General Description
The Dwarf Crocodile is the smallest of the species found in Sierra Leone. The adults are uniformly black on the back and sides, and the underside is yellowish with black patches. This species crocs have blunt short snort with the length almost the same as the width. They have heavily built neck, back and tail and overlapping scales on their belly, as defense mechanism against predation . The juveniles have a lighter brown banding on body and tails and yellow patterns on the head. Males are noticeably bigger than females.

Habitat
Dense swamp and flooded zones and small cool streams in closed canopy forests. Also found in savanna pools, open rivers and coastal lagoons.

Food
Feeds mainly on molluscs, crabs, frogs and fish.

Distribution
The Mamunta-Mayosso WS and possibly Gola Forest NP

Conservation Issues
Dwarf Crocodiles are have a very restricted distribution in the country and there is no indication that the population is stable or declining. It is mainly threated by habitat loss due to deforestation and hunting for meat. There is no conservation plan for the species, but it is covered under the implementation of the Wildlife Conservation Act and CITES.

References
Crocodile Specialist Group (1996)
Mitchell et al. (2009)
IUCN (2015)

SECTION EIGHT
THREATENED AND RARE FOREST AMPHIBIANS

8.1 Endangered Forest Amphibians

Ringed River Frog *Phrynobatrachus annulatus*

Order –Anura
Family – Phrynobatrachidae
IUCN Status – Endangered
CITES – Appendix xxx
Average body length – 25 mm
Local name – Frog
Picture – www.arkive.org

Distribution map

General Description
Phrynobatrachus annulatus is a small-sized species of frog, found in the forest floor, close to a water course. The dorsal skin appears a regular combat brown and black and is inundated by warts that extend from the head, down to the rump and the legs. The eyes are big and prominent. The skin on the underside of the animal is uniquely smooth and appears off-white. A vertebral line may sometimes be present, beginning at the level of shoulder up to the vent. The upper and lower lips are mottled black and white. The feet are unwebbed and the tips of the fingers and toes widen into small discs. The tympanum is not clearly seen. The males have white throat and no gular folds can be seen. The brown-black combat nature of the skin makes it difficult for the frog to be easily seen on the forest floor.

Habitat
Mainly found among the leaf litter in primary forests close to a stream, but it is very rarely encountered.

Food
Insects and other invertebrates

Distribution
The species has been recorded in GolaForest NP and Tiwai Island WS

Conservation Issues
The species is threatened by habitat loss through agriculture, logging and mining. There is need to establish a population status for the species through surveys in selected potential forest reserves. There is no conservation plan for the species, but it is covered under the implementation of the Wildlife Conservation Act and CITES.

References
Frost (2013)
Rödel and Schiøtz (2004)

Freetown Long-fingered Frog *Arthroleptes aureoli*

Order – Anura
Family – Arthroleptidae
IUCN Status – Endangered
CITES – Appendix xxx
Average body length – 24 mm
Local name – Frog
Picture – www.arkive.org

Distribution map

General Description

This species of frog, originally named *Cardioglossa aureoli* is unique to Sierra Leone and was first discovered in the rocky hills of Mount Aureol in Freetown, in 1964. It is a small forest-dependent species with whole body being a uniform mosaic pattern of broad black patches on dull pink. Its feet have characteristically long fingers from which it derives its name. The frogs could easily be passed unnoticed because of their small size and nocturnal behavior.

Habitat

Mainly found in rocky forested hills, sometimes close to a stream. It has also been seen in rural gardens close to a rocky hilly forest.

Food

Insects and other invertebrates

Distribution

Western Area Peninsula Forest NP and Bumbuna WMA

Conservation Issues

This species is affected by deforestation throughout its restricted range through logging, agriculture and human settlements. However, since it is relatively recently known to science, the species may also be a neo-endemic, which is being threatened by its inability to expand its range due to adverse habitat conditions. No particular amphibian conservation action exists, but this is being addressed through conservation programmes particularly in the Western Area Peninsula NP and the Bumbuna WMA.

References

Schiøtz, 1964
Rodel & Schiøtz (2004)
Frost (2014)
IUCN (2015)

Ivory Coast Frog *Hylarana occidentalis*

Order – Anura
Family – Ranidae
IUCN Status – Endangered
CITES – Appendix xxx
Average body length – 29 mm
Local name – Frog
Picture – www.arkive.org

Distribution map

General Description
This species of frog is also scientifically named *Amnirana occidentalis.* It is a relatively large forest frog with distinct body colour arrangement. The top of its head and back are covered in dark green which tappers towards its vent. The dark green is lined by dark brown on either sides of the body, its legs and much of its vent. The legs are also inundated by dark brown spots and stripes of varying sizes. The rest of the sides of the body and underparts are white with pale spots. The females are noticeably bigger than the males.

Habitat
Mainly occupies lowland close canopy undisturbed forest.

Food
Insects and other invertebrates

Distribution
The species has been recorded in Loma Mountains NP, but is also suspected to occur in the Tingi Hills NHFR and Gola Forest NP.

Conservation Issues
Habitat loss and degradation are the major threat to the survival of the species. More surveys are needed to ascertain its abundance and distribution in the country. No species-target conservation exists, but this is generally being addressed through site-based conservation actions at Loma Mountains NP and Gola Forest NP.

References
Rodel (2004)
Frost (2014)
IUCN (2015)
www.amphibiaweb.org

8.2 Vulnerable Forest Amphibians

Allen's Slippery Frog *Conrauaa alleni*

Order – Anura
Family – Conrauidae
IUCN Status – Vulnerable
CITES – Appendix xxx
Average body length – 24 mm
Local name – Frog
Picture – www.arkive.org

Distribution map

General Description
As the name implies this species is frog with slimy slippery body that is almost uniformly dark brown, except for a lighter underpart. With careful observation, the dark brown body is inundated by darker spots. The eyes are almost dorsally located on a protruding orbit. The hind limbs are quite tough suggesting its ability to leap well.

Habitat
Found near fast-flowing streams in hilly closed canopy forest areas. The species not been encountered in lowland forests and open areas.

Food
Insects and other invertebrates

Distribution
Loma Mountains NP and Tingi Hills NHFR. There is no evidence of occurrence elsewhere in the country

Conservation Issues
This species is dependent on forest in hilly areas and so is affected mainly by deforestation through logging, agriculture. No particular amphibian conservation action exists, but this is being addressed through conservation programmes particularly in the Loma Mountains NP.

References
Rodel & Schiøtz (2004)
Frost (2014)
IUCN (2015)
www.amphibiaweb.org

8.3 Near Threatened Forest Amphibians

Liberian River Frog *Phrynobatractus liberiensis*

Order –Anura
Family – Phrynobatrachidae
IUCN Status – Near Threatened
CITES – Appendix xxx
Average body length – 35 mm
Local name – Frog
Picture – www.arkive.org

Distribution map

General Description
Phrynobatrachus liberiensis is a medium-sized species of frog with an average size of about 35 mm. This species of frog mainly inhabits lowland to montane forest. The body can be described as having varying shades of buff to brown and black through the entire body. A white line runs through the middle of its back, with a regular pattern of brownish spots running alongside from head to rump; white line patches on either side run parallel to the mid white line. There are broad black patches on the side of its head to body, becoming triangular on its rump; the black patches on the body somehow aligns with that on its legs and feet. Its tarsals, especially the middle digits are elongated.

Habitat
It is found mainly along the streams and swampy areas in primary and sometimes secondary forests.

Food
Insects and other invertebrates

Distribution
Gola Forest NP and Loma Mountain NP and Western Area Peninsula NP.

Conservation Issues
Due to the fact that the species is patchily distributed in moist closed forests, its occurs in low numbers. It is mainly threatened by forest habitat destruction and degradation. There is need to conduct surveys to ascertain the population and distribution of the species. There is no legislation protecting the species, but it is recognized through the implementation of CITES.

References
Rödel and Schiøtz (2004)
www.amphibiaweb.org

Togo toad *Amietophrynus togoensis*

Order – Anura
Family – Bufonidae
IUCN Status – Near Threatened
CITES – Appendix xxx
Average body length – 35 mm
Local name – Frog
Picture – www.arkive.org

Distribution map

General Description
This species of frog is medium-sized and is found mainly associated with the litter in closed canopy forest. It is generally dark in colour, with the dorsal features being purplish brown and numerous black spots associated with warts that appear whitish on top. There is a regular pattern of about five black spot running down the back on either sides of the dorsal midline. The legs also have regular pattern of black patches. The eyes are prominent and there are white patches just below them. The underside appears yellowish and bears smoother warts. The males are females are morphologically similar.

Habitat
Amietophrynus togoensis inhabits in primary forest, usually in close association with the streams in which it breeds. It is usually found on stones in shallow water, or among vegetation next to the streams.

Food
Insects and other invertebrates

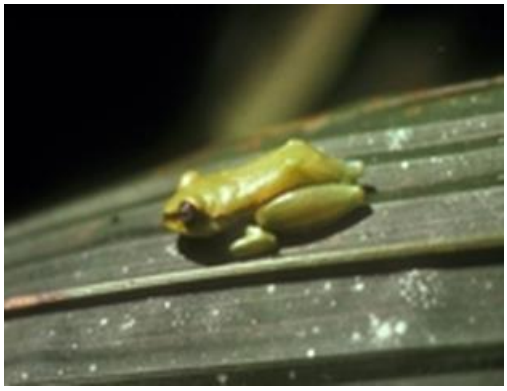
Distribution
Gola NP and Loma Mountains NP

Conservation Issues
The species is threatened by deforestation due to logging, agricultural, settlement expansion. No conservation plan for the species exist, but its conservation needs are addressed within the framework of the Wildlife Conservation Act, the CITES convention and site-specific conservation actions.

References
Frost (2013)
IUCN (2015)
Rödel and Tandy (2004)
www.amphibiaweb.org

Wermuth's Reed Frog *Hyperolius wermuthi*

Order – Anura
Family –Hyperoliidae
IUCN Status – Near Threatened
CITES – Appendix xxx
Average body length – 24 mm
Local name – Frog
Picture – www.arkive.org



Distribution map

General Description

This species is a small forest frog, with females noticeably bigger than the females. The body of the frog is generally greenish to yellowish-green, but with the ventral surface being transparent bluish green. There is no dark lateral pigmentation. The obits and eye balls are prominent and the pupil is horizontal. The hip bones are sharp and prominent with a sharp angular orientation to the pointed rump. This species is very similar to its congener *Hyperolius fusciventris* which is found in bushy areas, but differs in a number of minor morphological characters, particularly its ventral coloration.

Habitat

The species is found in swamps within dense forest. It is not uncommon to see the frogs sitting on the leaves, particularly of grasses.

Food

Insects and other invertebrates

Distribution

The species occurs at Gola NP and probably Loma Mountains NP.

Conservation Issues

This species is affected by deforestation throughout its limited lowland forest range, mainly a result of logging, agriculture and human settlements. No particular amphibian conservation action exists, but this is being addressed through conservation programmes in various protected areas such as the Gola National Park.

References

Schiøtz (1999)
www.amphibiaweb.org

Big-eyed forest Tree Frog *Leptopelis macrotis*

Order – Anura
Family –Arthroleptidae
IUCN Status – Near Threatened
CITES – Appendix xxx
Average body length – 60 mm
Local name – Frog
Picture – www.arkive.org

Distribution map

General Description

Leptopelis macrotis is one of the largest forest frog species of the genus *Leptopelis*. The males average 43 mm, whilst the females are can grow to an average of 80 mm. The body is generally brown, the feet are fully webbed with long knobbed digits and the tympanum is large. It has quite large and prominent brown eyes. The dorsum is smooth and transversely-striped in shades of brown. Its relatively large size and completely webbed feet among its genus are the key features for its identification. The males call from branches, most typically from near streams at heights of 5-10 m above the ground.

Habitat

Lowland moist forest, usually observed hopping among the terminal foliage of the mid-stratum of forests. It is usually arboreal.

Food

Insects and other invertebrates

Distribution

Gola Forest NP, Loma Mountains NP and Bumbuna WMA

Conservation Issues

This species is affected by deforestation throughout its limited lowland forest range, mainly a result of logging, agriculture and human settlements. No particular amphibian conservation action exists, but this is being addressed through conservation programmes in various protected areas such as the Gola National Park and Loma Mountain national Park and the Bumbuna WMA.

References

Schiøtz (1999)
www.amphibiaweb.org

Sierra Leone Reed frog *Hyperolius chlorosteus*

Order – Anura
Family – Hyperoliidae
IUCN Status – Near Threatened
CITES – Appendix xxx
Average body length – 35 mm
Local name – Frog
Picture – www.arkive.org

Distribution map

General Description

The Sierra Leone Reed Frog is a relatively large forest frog. The body colour is generally light green or olive brown inundated by light spots. There is a broad light stripe on each upper sides of the body and a triangular light patch on the front extending from the nose to the top of the obit of the eyes; the pupils are horizontal. The males have yellow gular sac. The limbs and toes are greenish yellow, and the tips of the toes are knobbed. The species is usually vocal in its locality.

Habitat

It is arboreal in lowland moist forest to mid altitude forest, but very rarely encountered.

Food

Insects and other invertebrates

Distribution

Gola Forest NP, Loma Mountains NP and Bumbuna WMA

Conservation Issues

This species is affected by deforestation throughout its restricted range through logging, agriculture and human settlements. No particular amphibian conservation action exists, but this is being addressed through conservation programmes in various protected areas such as the Gola Forest NP and Loma Mountains NP and the Bumbuna WMA.

References

Rodel & Schiøtz (2004)
IUCN (2015)
www.amphibiaweb.org

Nimba Reed Frog *Hyperolius zonatus*

Order – Anura
Family – Hyperoliidae
IUCN Status – Near Threatened
CITES – Appendix xxx
Average body length – 24 mm
Local name – Frog
Picture – www.arkive.org

Distribution map

General Description

Hyperolius zonatus is a small species of frog found forest areas. Its body is fairly smooth and generally dirty brown in colour with a broad dark brown running through its sides and around its rump. The dark brown colour is interrupted by the orbit of the eye, but extends as a narrower strip connecting the orbits through the snort. The toes are relatively short and knobbed.

Habitat

Found in temporary ponds and swampy areas in closed primary forests.

Food

Insects and other invertebrates

Distribution

The species has been at Gola Forest NP, but is suspected to occur in other forests in southeastern Sierra Leone.

Conservation Issues

This species is affected by deforestation through logging, agriculture and human settlements. No particular amphibian conservation action exists, but this is being addressed through conservation programmes particularly in the Western Area Peninsula NP and the Bumbuna WMA.

References

Schiøtz & Rodel (2004)
Frost (2014)
IUCN (2015)
www.amphibiaweb.org

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APPENDIX 1 – IUCN CATEGORIES AND CRITERIA

2.2.1 CRITICALLY ENDANGERED (CR)

A taxon is Critically Endangered when the best available evidence indicates that it meets any of the following criteria (A to E), and it is therefore considered to be facing an extremely high risk of extinction in the wild:

A. Reduction in population size based on any of the following:

1. An observed, estimated, inferred or suspected population size reduction of ≥ 90% over the last 10 years or three generations, whichever is the longer, where the causes of the reduction are clearly reversible AND understood AND ceased, based on (and specifying) any of the following:
    a) direct observation
    b) an index of abundance appropriate to the taxon
    c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
    d) actual or potential levels of exploitation
    e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.
2. An observed, estimated, inferred or suspected population size reduction of ≥ 80% over the last 10 years or three generations, whichever is the longer, where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of the following:
    a) direct observation
    b) an index of abundance appropriate to the taxon
    c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
    d) actual or potential levels of exploitation
    e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.
3. A population size reduction of ≥ 80%, projected or suspected to be met within the next 10 years or three generations, whichever is the longer (up to a maximum of 100 years), based on (and specifying) any of the following:
    a) an index of abundance appropriate to the taxon
    b) a decline in area of occupancy, extent of occurrence and/or quality of habitat
    c) actual or potential levels of exploitation
    d) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.
4. An observed, estimated, inferred, projected or suspected population size reduction of ≥ 80% over any 10 year or three generation period, whichever is longer

(up to a maximum of 100 years in the future), where the time period must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of the following:

a) direct observation
b) an index of abundance appropriate to the taxon
c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
d) actual or potential levels of exploitation
e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites

B. Geographic range in the form of either B1 (extent of occurrence) OR B2 (area of occupancy) OR both:

1. Extent of occurrence estimated to be less than 100 km^2, and estimates indicating at least two of a-c:

a) Severely fragmented or known to exist at only a single location.
b) Continuing decline, observed, inferred or projected, in any of the following:
    (i) extent of occurrence
    (ii) area of occupancy
    (iii) area, extent and/or quality of habitat
    (iv) number of locations or subpopulations
    (v) number of mature individuals.
c. Extreme fluctuations in any of the following:
    (i) extent of occurrence
    (ii) area of occupancy
    (iii) number of locations or subpopulations
    (iv) number of mature individuals.

2. Area of occupancy estimated to be less than 10 km^2, and estimates indicating at least two of a-c:

a. Severely fragmented or known to exist at only a single location.
b. Continuing decline, observed, inferred or projected, in any of the following:
    (i) extent of occurrence
    (ii) area of occupancy
    (iii) area, extent and/or quality of habitat
    (iv) number of locations or subpopulations
    (v) number of mature individuals.
c. Extreme fluctuations in any of the following:
    (i) extent of occurrence
    (ii) area of occupancy
    (iii) number of locations or subpopulations

(iv) number of mature individuals.

C. Population size estimated to number fewer than 250 mature individuals and either:

1. An estimated continuing decline of at least 25% within three years or one generation, whichever is longer, (up to a maximum of 100 years in the future) OR

2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals AND at least one of the following (a-b):

(a) Population structure in the form of one of the following:

(i) no subpopulation estimated to contain more than 50 mature individuals, OR

(ii) at least 90% of mature individuals in one subpopulation.

(b) Extreme fluctuations in number of mature individuals.

D. Population size estimated to number fewer than 50 mature individuals.

E. Quantitative analysis showing the probability of extinction in the wild is at least 50% within 10 years or three generations, whichever is the longer (up to a maximum of 100 years).

2.2.2 ENDANGERED (EN)

A taxon is Endangered when the best available evidence indicates that it meets any of the following criteria (A to E), and it is therefore considered to be facing a very high risk of extinction in the wild:

A. Reduction in population size based on any of the following:

1. An observed, estimated, inferred or suspected population size reduction of ≥ 70% over the last 10 years or three generations, whichever is the longer, where the causes of the reduction are clearly reversible AND understood AND ceased, based on (and specifying) any of the following:

a. direct observation
b. an index of abundance appropriate to the taxon
c. a decline in area of occupancy, extent of occurrence and/or quality of habitat
d. actual or potential levels of exploitation
e. the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.

2. An observed, estimated, inferred or suspected population size reduction of ≥ 50% over the last 10 years or three generations, whichever is the longer, where

the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of the following:

a) direct observation
b) an index of abundance appropriate to the taxon
c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
d) actual or potential levels of exploitation
e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.

3. A population size reduction of ≥;50%, projected or suspected to be met within the next 10 years or three generations, whichever is the longer (up to a maximum of 100 years), based on (and specifying) any of the following:

a) an index of abundance appropriate to the taxon
b) a decline in area of occupancy, extent of occurrence and/or quality of habitat
c) actual or potential levels of exploitation
d) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.

4. An observed, estimated, inferred, projected or suspected population size reduction of ≥ 50% over any 10 year or three generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of the following:

a) direct observation
b) an index of abundance appropriate to the taxon
c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
d) actual or potential levels of exploitation
e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.

B. Geographic range in the form of either B1 (extent of occurrence) OR B2 (area of occupancy) OR both:

1. Extent of occurrence estimated to be less than 5,000 km^2, and estimates indicating at least two of a-c:

a) Severely fragmented or known to exist at no more than five locations.
b) Continuing decline, observed, inferred or projected, in any of the following:
(i) extent of occurrence

(ii) area of occupancy
(iii) area, extent and/or quality of habitat
(iv) number of locations or subpopulations
(v) number of mature individuals.

c) Extreme fluctuations in any of the following:
(i) extent of occurrence
(ii) area of occupancy
(iii) number of locations or subpopulations
(iv) number of mature individuals.

2. Area of occupancy estimated to be less than 500 km^2, and estimates indicating at least two of a-c:

a) Severely fragmented or known to exist at no more than five locations.
b) Continuing decline, observed, inferred or projected, in any of the following:
(i) extent of occurrence
(ii) area of occupancy
(iii) area, extent and/or quality of habitat
(iv) number of locations or subpopulations
(v) number of mature individuals.

a) Extreme fluctuations in any of the following:
(i) extent of occurrence
(ii) area of occupancy
(iii) number of locations or subpopulations
(iv) number of mature individuals.

C. Population size estimated to number fewer than 2,500 mature individuals and either:

1. An estimated continuing decline of at least 20% within five years or two generations, whichever is longer, (up to a maximum of 100 years in the future) OR

2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals AND at least one of the following (a-b):

a) Population structure in the form of one of the following:
(i) no subpopulation estimated to contain more than 250 mature individuals, OR
(ii) at least 95% of mature individuals in one subpopulation.
b) Extreme fluctuations in number of mature individuals.

D. Population size estimated to number fewer than 250 mature individuals.

E. Quantitative analysis showing the probability of extinction in the wild is at least 20% within 20 years or five generations, whichever is the longer (up to a maximum of 100 years).

2.2.3 VULNERABLE (VU)

A taxon is Vulnerable when the best available evidence indicates that it meets any of the following criteria (A to E), and it is therefore considered to be facing a high risk of extinction in the wild:

A. Reduction in population size based on any of the following:

1. An observed, estimated, inferred or suspected population size reduction of ≥ 50% over the last 10 years or three generations, whichever is the longer, where the causes of the reduction are: clearly reversible AND understood AND ceased, based on (and specifying) any of the following:
    a) direct observation
    b) an index of abundance appropriate to the taxon
    c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
    d) actual or potential levels of exploitation
    e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.
2. An observed, estimated, inferred or suspected population size reduction of ≥ 30% over the last 10 years or three generations, whichever is the longer, where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of the following:
    a) direct observation
    b) an index of abundance appropriate to the taxon
    c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
    d) actual or potential levels of exploitation
    e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.
3. A population size reduction of ≥ 30%, projected or suspected to be met within the next 10 years or three generations, whichever is the longer (up to a maximum of 100 years), based on (and specifying) any of the following:
    a) an index of abundance appropriate to the taxon
    b) a decline in area of occupancy, extent of occurrence and/or quality of habitat
    c) actual or potential levels of exploitation

d) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.

4. An observed, estimated, inferred, projected or suspected population size reduction of ≥ 30% over any 10 year or three generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of the following:

a) direct observation
b) an index of abundance appropriate to the taxon
c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
d) actual or potential levels of exploitation
e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.

B. Geographic range in the form of either B1 (extent of occurrence) OR B2 (area of occupancy) OR both:

1. Extent of occurrence estimated to be less than 20,000 km^2, and estimates indicating at least two of a-c:

a) Severely fragmented or known to exist at no more than 10 locations.
b) Continuing decline, observed, inferred or projected, in any of the following:
   (i) extent of occurrence
   (ii) area of occupancy
   (iii) area, extent and/or quality of habitat
   (iv) number of locations or subpopulations
   (v) number of mature individuals.
c) Extreme fluctuations in any of the following:
   (i) extent of occurrence
   (ii) area of occupancy
   (iii) number of locations or subpopulations
   (iv) number of mature individuals.

2. Area of occupancy estimated to be less than 2,000 km^2, and estimates indicating at least two of a-c:

a) Severely fragmented or known to exist at no more than 10 locations.
b) Continuing decline, observed, inferred or projected, in any of the following:
   (i) extent of occurrence
   (ii) area of occupancy

(iii) area, extent and/or quality of habitat
(iv) number of locations or subpopulations
(v) number of mature individuals.

c) Extreme fluctuations in any of the following:
(i) extent of occurrence
(ii) area of occupancy
(iii) number of locations or subpopulations
(iv) number of mature individuals.

C. Population size estimated to number fewer than 10,000 mature individuals and either:

1. An estimated continuing decline of at least 10% within 10 years or three generations, whichever is longer, (up to a maximum of 100 years in the future) OR

2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals AND at least one of the following (a-b):

a) Population structure in the form of one of the following:
(i) no subpopulation estimated to contain more than 1,000 mature individuals, OR
(ii) all mature individuals are in one subpopulation.

b) Extreme fluctuations in number of mature individuals.

D. Population very small or restricted in the form of either of the following:

1. Population size estimated to number fewer than 1,000 mature individuals.

2. Population with a very restricted area of occupancy (typically less than 20 km^2) or number of locations (typically five or fewer) such that it is prone to the effects of human activities or stochastic events within a very short time period in an uncertain future, and is thus capable of becoming Critically Endangered or even Extinct in a very short time period.

E. Quantitative analysis showing the probability of extinction in the wild is at least 10% within 100 years.

APPENDIX II – LIST OF BIRDS OF SIERRA LEONE, 2013

English name	Scientific name
Forest Francolin	*Francolinus lathami*
Double-spurred Francolin	*Francolinus bicalcaratus*
Ahanta Francolin	*Francolinus ahantensis*
Common Quail	*Coturnix coturnix*
African Blue Quail	*Coturnix adansonii*
Stone Partridge	*Ptilopachus petrosus*
White-breasted Guineafowl	*Agelastes meleagrides*
Helmeted Guineafowl	*Numida meleagris*
Crested Guineafowl	*Guttera pucherani*
Fulvous Whistling-duck	*Dendrocygna bicolor*
White-faced Whistling-duck	*Dendrocygna viduata*
Egyptian Goose	*Alopochen aegyptiacus*
Spur-winged Goose	*Plectropterus gambensis*
Hartlaub's Duck	*Pteronetta hartlaubii*
Knob-billed Duck	*Sarkidiornis melanotos*
African Pygmy-goose	*Nettapus auritus*
Northern Pintail	*Anas acuta*
Garganey	*Anas querquedula*
Northern Shoveler	*Anas clypeata*
Ferruginous Duck	*Aythya nyroca*
Tufted Duck	*Aythya fuligula*
Little Buttonquail	*Turnix sylvaticus*
Black-rumped Buttonquail	*Turnix hottentottus*
Spotted Honeyguide	*Indicator maculatus*
Greater Honeyguide	*Indicator indicator*
Lesser Honeyguide	*Indicator minor*
Willcocks's Honeyguide	*Indicator willcocksi*
Least Honeyguide	*Indicator exilis*
Lyre-tailed Honeyguide	*Melichneutes robustus*
Yellow-footed Honeyguide	*Melignomon eisentrauti*
Cassin's Honeyguide	*Prodotiscus insignis*
Eurasian Wryneck	*Jynx torquilla*
Tawny Piculet	*Dicrurus adsimilis*
Grey Woodpecker	*Dendropicos goertae*
Fine-spotted Woodpecker	*Campethera punctuligera*
Little Green Woodpecker	*Campethera maculosa*
Buff-spotted Woodpecker	*Campethera nivosa*
Brown-eared Woodpecker	*Campethera caroli*
Cardinal Woodpecker	*Dendropicos fuscescens*
Melancholy Woodpecker	*Dendropicos lugubris*
Gabon Woodpecker	*Dendropicos gabonensis*
Fire-bellied Woodpecker	*Thripias pyrrhogaster*
Brown-backed Woodpecker	*Dendrocopos obsoletus*
Naked-faced Barbet	*Gymnobucco calvus*
Bristle-nosed Barbet	*Gymnobucco peli*
Speckled Tinkerbird	*Pogoniulus scolopaceus*
Red-rumped Tinkerbird	*Pogoniulus atroflavus*
Yellow-throated Tinkerbird	*Pogoniulus subsulphureus*
Yellow-rumped Tinkerbird	*Pogoniulus bilineatus*
Yellow-spotted Barbet	*Buccanodon duchaillui*
Hairy-breasted Barbet	*Tricholaema hirsuta*
Vieillot's Barbet	*Lybius vieilloti*
Double-toothed Barbet	*Lybius bidentatus*
Yellow-billed Barbet	*Trachyphonus purpuratus*

White-crested Hornbill	*Tropicranus albocristatus*
Black Dwarf Hornbill	*Tockus hartlaubi*
Red-billed Dwarf Hornbill	*Tockus camurus*
Red-billed Hornbill	*Tockus erythrorhynchus*
African Pied Hornbill	*Tockus fasciatus*
African Grey Hornbill	*Tockus nasutus*
Piping Hornbill	*Bycanistes fistulator*
Black-and-white-casqued Hornbill	*Bycanistes subcylindricus*
Brown-cheeked Hornbill	*Bycanistes cylindricus*
Black-casqued Hornbill	*Ceratogymna atrata*
Yellow-casqued Hornbill	*Ceratogymna elata*
Abyssinian Ground-hornbill	*Bucorvus abyssinicus*
Eurasian Hoopoe	*Upupa epops*
Green Woodhoopoe	*Phoeniculus purpureus*
Black Scimitarbill	*Rhinopomastus aterrimus*
Narina Trogon	*Apaloderma narina*
Abyssinian Roller	*Coracias abyssinicus*
Rufous-crowned Roller	*Coracias naevia*
Blue-bellied Roller	*Coracias cyanogaster*
Broad-billed Roller	*Eurystomus glaucurus*
Blue-throated Roller	*Eurystomus gularis*
Shining Blue Kingfisher	*Alcedo quadribrachys*
Malachite Kingfisher	*Alcedo cristata*
White-bellied Kingfisher	*Alcedo leucogaster*
African Pygmy-kingfisher	*Ceyx pictus*
African Dwarf-kingfisher	*Ceyx lecontei*
Chocolate-backed Kingfisher	*Halcyon badia*
Grey-headed Kingfisher	*Halcyon leucocephala*
Woodland Kingfisher	*Halcyon senegalensis*

Blue-breasted Kingfisher	*Halcyon malimbica*
Striped Kingfisher	*Halcyon chelicuti*
Giant Kingfisher	*Megaceryle maxima*
Pied Kingfisher	*Ceryle rudis*
Black Bee-eater	*Merops gularis*
Blue-headed Bee-eater	*Merops muelleri*
Red-throated Bee-eater	*Merops bulocki*
Little Bee-eater	*Merops pusillus*
Swallow-tailed Bee-eater	*Merops hirundineus*
White-throated Bee-eater	*Merops albicollis*
Blue-cheeked Bee-eater	*Merops persicus*
European Bee-eater	*Merops apiaster*
Northern Carmine Bee-eater	*Merops nubicus*
Levaillant's Cuckoo	*Clamator levaillantii*
Great Spotted Cuckoo	*Clamator glandarius*
Thick-billed Cuckoo	*Pachycoccyx audeberti*
Red-chested Cuckoo	*Cuculus solitarius*
Black Cuckoo	*Cuculus clamosus*
Common Cuckoo	*Cuculus canorus*
African Cuckoo	*Cuculus gularis*
Dusky Long-tailed Cuckoo	*Cercococcyx mechowi*
Olive Long-tailed Cuckoo	*Cercococcyx olivinus*
Yellow-throated Cuckoo	*Chrysococcyx flavigularis*
Klaas's Cuckoo	*Chrysococcyx klaas*
African Emerald Cuckoo	*Chrysococcyx cupreus*
Didric Cuckoo	*Chrysococcyx caprius*
Yellowbill	*Ceuthmochares aereus*
Black Coucal	*Centropus grillii*
Black-throated Coucal	*Centropus leucogaster*

Blue-headed Coucal	*Centropus monachus*
Senegal Coucal	*Centropus senegalensis*
Grey Parrot	*Psittacus erithacus*
Brown-necked Parrot	*Poicephalus robustus*
Senegal Parrot	*Poicephalus senegalus*
Red-headed Lovebird	*Agapornis pullarius*
Black-collard Lovebird	*Agapornis swindernianus*
Rose-ringed Parakeet	*Psittacula krameri*
Mottled Spinetail	*Telecanthura ussheri*
Black Spinetail	*Telacanthura melanopygia*
Sabine's Spinetail	*Rhaphidura sabini*
Cassin's Spinetail	*Neafrapus cassini*
African Palm-swift	*Cypsiurus parvus*
Alpine Swift	*Tachymarptis melba*
Mottled Swift	*Tachymarptis aequatorialis*
Common Swift	*Apus apus*
Pallid Swift	*Apus pallidus*
African Black Swift	*Apus barbatus*
Little Swift	*Apus affinis*
White-rumped Swift	*Apus caffer*
Bates's Swift	*Apus batesi*
Guinea Turaco	*Tauraco persa*
Yellow-billed Turaco	*Tauraco macrorhynchus*
Violet Turaco	*Musophaga violacea*
Western Grey Plantain-eater	*Crinifer piscator*
Great Blue Turaco	*Corythaeola cristata*
Barn Owl	*Tyto alba*
Common Scops-owl	*Otus scops*
White-faced Scops-owl	*Otus leucotis*

African Scops-owl	*Otus senegalensis*
Spotted Eagle-owl	*Bubo africanus*
Fraser's Eagle-owl	*Bubo poensis*
Shelley's Eagle-owl	*Bubo shelleyi*
Giant Eagle-owl	*Bubo lacteus*
Akun Eagle-owl	*Bubo leucostictus*
Pel's Fishing-owl	*Scotopelia peli*
Rufous Fishing-owl	*Scotopelia ussheri*
African Wood-owl	*Strix woodfordii*
Northern White-faced Owl	*Ptilopsis leucotis*
Grayish Eagle-Owl	*Bubo cinerascens*
Red-chested Owlet	*Glaucidium tephronotum*
Pearl-spotted Owlet	*Glaucidium perlatum*
Eurasian Nightjar	*Caprimulgus europaeus*
Black-shouldered Nightjar	*Caprimulgus nigriscapularis*
Swamp Nightjar	*Caprimulgus natalensis*
Plain Nightjar	*Caprimulgus inornatus*
Freckled Nightjar	*Caprimulgus tristigma*
Long-tailed Nightjar	*Caprimulgus climacurus*
Brown Nightjar	*Veles binotatus*
Standard-winged Nightjar	*Macrodipteryx longipennis*
Speckled Pigeon	*Columba guinea*
Afep Pigeon	*Columba unicincta*
Western Bronze-naped Pigeon	*Columba iriditorques*
Lemon Dove	*Aplopelia larvata*
European Turtle-dove	*Streptopelia turtur*
Laughing Dove	*Stigmatopelia senegalensis*
Vinaceous Dove	*Streptopelia vinacea*
Red-eyed Dove	*Streptopelia semitorquata*

Blue-spotted Wood-dove	*Turtur afer*
Tambourine Dove	*Turtur tympanistria*
Blue-headed Wood-dove	*Turtur brehmeri*
Namaqua Dove	*Oena capensis*
African Green-pigeon	*Treron calvus*
Denham's Bustard	*Neotis denhami*
Black-bellied Bustard	*Eupodotis melanogaster*
African Finfoot	*Podica senegalensis*
White-spotted Flufftail	*Sarothrura pulchra*
Buff-spotted Flufftail	*Sarothrura elegans*
Red-chested Flufftail	*Sarothrura rufa*
Nkulengu Rail	*Himantornis haematopus*
Grey-throated Rail	*Canirallus oculeus*
African Water Rail	*Rallus caerulescens*
African Crake	*Crecopsis egregia*
Black Crake	*Amaurornis flavirostra*
Purple Swamphen	*Porphyrio porphyrio*
Allen's Gallinule	*Porphyrio alleni*
Common Moorhen	*Gallinula chloropus*
Lesser Moorhen	*Gallinula angulata*
Four-banded Sandgrouse	*Pterocles quadricinctus*
Common Snipe	*Gallinago gallinago*
Great Snipe	*Gallinago media*
Black-tailed Godwit	*Limosa limosa*
Bar-tailed Godwit	*Limosa lapponica*
Whimbrel	*Numenius phaeopus*
Eurasian Curlew	*Numenius arquata*
Common Redshank	*Tringa totanus*
Marsh Sandpiper	*Tringa stagnatilis*
Common Greenshank	*Tringa nebularia*
Spotted Redshank	*Tringa erythropus*
Green Sandpiper	*Tringa ochropus*
Wood Sandpiper	*Tringa glareola*
Common Sandpiper	*Actitis hypoleucos*
Ruddy Turnstone	*Arenaria interpres*
Red Knot	*Calidris canutus*
Sanderling	*Calidris alba*
Little Stint	*Calidris minuta*
Temminck's Stint	*Calidris temminckii*
Pectoral Sandpiper	*Calidris melanotos*
Dunlin	*Calidris alpine*
Curlew Sandpiper	*Calidris ferruginea*
Ruff	*Philomachus pugnax*
Red-necked Phalarope	*Phalaropus lobatus*
Red Phalarope	*Phalaropus fulicarius*
Greater Painted-snipe	*Rostratula benghalensis*
African Jacana	*Actophilornis africanus*
Lesser Jacana	*Microparra capensis*
Eurasian Thick-knee	*Burhinus oedicnemus*
Senegal Thick-knee	*Burhinus senegalensis*
Eurasian Oystercatcher	*Haematopus ostralegus*
Black-winged Stilt	*Himantopus himantopus*
Pied Avocet	*Recurvirostra avosetta*
Grey Plover	*Pluvialis squatarola*
Common Ringed Plover	*Charadrius hiaticula*
Little Ringed Plover	*Charadrius dubius*
Kittlitz's Plover	*Charadrius pecuarius*
Forbes's Plover	*Charadrius forbesi*

Kentish Plover	*Charadrius alexandrinus*
White-fronted Plover	*Charadrius marginatus*
Spur-winged Lapwing	*Vanellus spinosus*
White-headed Lapwing	*Vanellus albiceps*
Wattled Lapwing	*Vanellus senegallus*
Senegal Lapwing	*Vanellus lugubris*
Egyptian Plover	*Pluvianus aegyptius*
Temminck's Courser	*Cursorius temminckii*
Collared Pratincole	*Glareola pratincola*
Rock Pratincole	*Glareola nuchalis*
Pomarine Jaeger	*Stercorarius pomarinus*
Parasitic Jaeger	*Stercorarius parasiticus*
Long-tailed Skua	*Stercorarius longicaudus*
African Skimmer	*Rynchops flavirostris*
Lesser Black-backed Gull	*Larus fuscus*
Grey-headed Gull	*Larus cirrocephalus*
Black-headed Gull	*Larus ridibundus*
Little Gull	*Larus minutus*
Sabine's Gull	*Xema sabini*
Damara Tern	*Sterna balaenarum*
Lesser Crested Tern	*Sterna bengalensis*
Gull-billed Tern	*Sterna nilotica*
Caspian Tern	*Sterna caspia*
Royal Tern	*Sterna maxima*
Sandwich Tern	*Sterna sandvicensis*
Common Tern	*Sterna hirundo*
Arctic Tern	*Sterna paradisaea*
Little Tern	*Sterna albifrons*
Sooty Tern	*Sterna fuscata*

Roseate Tern	*Sterna dougalli*
Whiskered Tern	*Chlidonias hybrida*
White-winged Tern	*Chlidonias leucopterus*
Black Tern	*Chlidonias niger*
Brown Noddy	*Anous stolidus*
Black Noddy	*Anous minutus*
Osprey	*Pandion haliaetus*
African Baza	*Aviceda cuculoides*
European Honey-buzzard	*Pernis apivorus*
Bat Hawk	*Macheiramphus alcinus*
Black-winged Kite	*Elanus caeruleus*
Black Kite	*Milvus migrans*
African Fish-eagle	*Haliaeetus vocifer*
Palm-nut Vulture	*Gypohierax angolensis*
Hooded Vulture	*Necrosyrtes monachus*
White-backed Vulture	*Gyps africanus*
Rueppell's Vulture	*Gyps rueppellii*
Brown Snake-eagle	*Circaetus cinereus*
Banded Snake-eagle	*Circaetus cinerascens*
Beaudouin's Snake-Eagle	*Circaetus beaudouini*
Bateleur	*Terathopius ecaudatus*
Congo Serpent-eagle	*Dryotriorchis spectabilis*
Western Marsh-harrier	*Circus aeruginosus*
Pallid Harrier	*Circus macrourus*
Montagu's Harrier	*Circus pygargus*
African Harrier-hawk	*Polyboroides typus*
Lizard Buzzard	*Kaupifalco monogrammicus*
Dark Chanting-goshawk	*Melierax metabates*
African Goshawk	*Accipiter tachiro*

Shikra	*Accipiter badius*
Red-thighed Sparrowhawk	*Accipiter erythropus*
Ovampo Sparrowhawk	*Accipiter ovampensis*
Black Goshawk	*Accipiter melanoleucus*
Gabar goshawk	*Melierax gabar*
Long-tailed Hawk	*Urotriorchis macrourus*
Grasshopper Buzzard	*Butastur rufipennis*
Common Buzzard	*Buteo buteo*
Red-necked Buzzard	*Buteo auguralis*
Tawny Eagle	*Aquila rapax*
Wahlberg's Eagle	*Aquila wahlbergi*
African Hawk-eagle	*Hieraaetus spilogaster*
Booted Eagle	*Hieraaetus pennatus*
Ayres's Hawk-eagle	*Hieraaetus ayresii*
Martial Eagle	*Polemaetus bellicosus*
Long-crested Eagle	*Lophaetus occipitalis*
Cassin's Hawk-eagle	*Spizaetus africanus*
Crowned Hawk-eagle	*Stephanoaetus coronatus*
Lesser Kestrel	*Falco naumanni*
Common Kestrel	*Falco tinnunculus*
Fox Kestrel	*Falco alopex*
Grey Kestrel	*Falco ardosiaceus*
African Hobby	*Falco cuvierii*
Peregrine Falcon	*Falco peregrinus*
Little Grebe	*Tachybaptus ruficollis*
Northern Gannet	*Morus bassanus*
Brown Booby	*Sula leucogaster*
African Darter	*Anhinga rufa*
Reed Cormorant	*Phalacrocorax africanus*

Black Heron	*Egretta ardesiaca*
Little Egret	*Egretta garzetta*
Western Reef-egret	*Egretta gularis*
Grey Heron	*Ardea cinerea*
Black-headed Heron	*Ardea melanocephala*
Goliath Heron	*Ardea goliath*
Purple Heron	*Ardea purpurea*
Great Egret	*Casmerodius albus*
Intermediate Egret	*Mesophoyx intermedia*
Cattle Egret	*Bubulcus ibis*
Squacco Heron	*Ardeola ralloides*
Striated Heron	*Butorides striata*
Black-crowned Night-heron	*Nycticorax nycticorax*
White-backed Night-heron	*Gorsachius leuconotus*
White-crested Tiger-heron	*Tigriornis leucolopha*
Little Bittern	*Ixobrychus minutus*
Dwarf Bittern	*Ixobrychus sturmii*
Hamerkop	*Scopus umbretta*
Greater Flamingo	*Phoenicopteridae roseus*
Lesser Flamingo	*Phoeniconaias minor*
Glossy Ibis	*Plegadis falcinellus*
Hadada Ibis	*Bostrychia hagedash*
African Olive Ibis	*Bostrychia olivacea*
African Sacred Ibis	*Threskiornis aethiopicus*
African Spoonbill	*Platalea alba*
European Spoonbill	*Platalea leucorodia*
Pink-backed Pelican	*Pelecanus rufescens*
Great-white Pelican	*Pelecanus onocrotalus*
Yellow-billed Stork	*Mycteria ibis*

African Openbill	*Anastomus lamelligerus*
Abdim's Stork	*Ciconia abdimii*
Woolly-necked Stork	*Ciconia episcopus*
White Stork	*Ciconia ciconia*
Marabou Stork	*Leptoptilos crumeniferus*
Cory's Shearwater	*Calonectris diomedea*
Wilson's Storm-petrel	*Oceanites oceanicus*
European Storm-petrel	*Hydrobates pelagicus*
Madeiran Storm-petrel	*Oceanodroma castro*
Leach's Storm-petrel	*Oceanodroma leucorhoa*
African Pitta	*Pitta angolensis*
African Broadbill	*Smithornis capensis*
Rufous-sided Broadbill	*Smithornis rufolateralis*
Common Fiscal	*Lanius collaris*
Woodchat Shrike	*Lanius senator*
Yellow-billed Shrike	*Corvinella corvina*
Piapiac	*Ptilostomus afer*
Pied Crow	*Corvus albus*
Eurasian Golden Oriole	*Oriolus oriolus*
African Golden Oriole	*Oriolus auratus*
Western Black-headed Oriole	*Oriolus brachyrhynchus*
Black-winged Oriole	*Oriolus nigripennis*
White-breasted Cuckooshrike	*Coracina pectoralis*
Blue Cuckooshrike	*Coracina azurea*
Red-shouldered Cuckooshrike	*Campephaga phoenicea*
Purple-throated Cuckooshrike	*Campephaga quiscalina*
Western Wattled Cuckooshrike	*Campephaga lobata*
Square-tailed Drongo	*Dicrurus ludwigii*
Shining Drongo	*Dicrurus atripennis*

Glossy back or Fork-tailed Drongo	*Dicrurus adsimilis atactus*
Velvet-mantled Drongo	*Dicrurus modestus*
Chestnut-capped Flycatcher	*Erythrocercus mccallii*
African Blue-flycatcher	*Elminia longicauda*
Dusky Crested-flycatcher	*Elminia nigromitrata*
Blue-headed Crested-flycatcher	*Trochocercus nitens*
African Paradise-flycatcher	*Terpsiphone viridis*
Red-bellied Paradise Flycatcher	*Terpsiphone rufiventer*
Brubru	*Nilaus afer*
Northern Puffback	*Dryoscopus gambensis*
Large-billed Puffback	*Dryoscopus sabini*
Marsh Tchagra	*Tchagra minutus*
Black-crowned Tchagra	*Tchagra senegalus*
Brown-crowned Tchagra	*Tchagra australis*
Turati's Boubou	*Laniarius turatii*
Tropical Boubou	*Laniarius aethiopicus*
Common Gonolek	*Laniarius barbarus*
Sooty Boubou	*Laniarius leucorhynchus*
Sulphur-breasted Bush-shrike	*Malaconotus sulfureopectus*
Many-coloured Bush-shrike	*Malaconotus multicolor*
Fiery-breasted Bush-shrike	*Malaconotus cruentus*
Lagden's Bush-shrike	*Malaconotus lagdeni*
Grey-headed Bush-shrike	*Malaconotus blanchoti*
White Helmet-shrike	*Prionops plumatus*
Chestnut-bellied Helmet-shrike	*Prionops caniceps*
African Shrike-flycatcher	*Megabyas flammulatus*
Black-and-white Shrike-flycatcher	*Bias musicus*
Senegal Batis	*Batis senegalensis*
West African Batis	*Batis occulta*

Brown-throated Wattle-eye	*Platysteira cyanea*
Chestnut Wattle-eye	*Platysteira castanea*
Red-cheeked Wattle-eye	*Platysteira blissetti*
Yellow-bellied Wattle-eye	*Platysteira concreta*
White-necked Picathartes	*Picathartes gymnocephalus*
Finsch's Flycatcher-thrush	*Neocossyphus finschii*
White-tailed Ant-thrush	*Neocossyphus poensis*
Blue Rock-thrush	*Monticola solitarius*
Grey Ground-thrush	*Zoothera princei*
African Thrush	*Turdus pelios*
Brown-chested Alethe	*Alethe poliocephala*
White-tailed Alethe	*Alethe diademata*
Pale Flycatcher	*Bradornis pallidus*
Northern Black Flycatcher	*Melaenornis edolioides*
Nimba Flycatcher	*Melaenornis annamarulae*
African Forest Flycatcher	*Fraseria ocreata*
White-browed Forest Flycatcher	*Fraseria cinerascens*
Spotted Flycatcher	*Muscicapa striata*
Ussher's Flycatcher	*Muscicapa ussheri*
Olivaceous Flycatcher	*Muscicapa olivascens*
Little Grey Flycatcher	*Muscicapa epulata*
Dusky-blue Flycatcher	*Muscicapa comitata*
Tessmann's Flycatcher	*Muscicapa tessmanni*
Cassin's Grey Flycatcher	*Muscicapa cassini*
Ashy Flycatcher	*Muscicapa caerulescens*
Grey-throated Tit-flycatcher	*Myioparus griseigularis*
Grey Tit-flycatcher	*Myioparus plumbeus*
European Pied Flycatcher	*Ficedula hypoleuca*
Forest Robin	*Stiphrornis erythrothorax*

Lowland Akalat	*Sheppardia cyornithopsis*
Common Nightingale	*Luscinia megarhynchos*
Blue-shouldered Robin-chat	*Cossypha cyanocampter*
Grey-winged Robin-chat	*Cossypha polioptera*
Snowy-crowned Robin-chat	*Cossypha niveicapilla*
White-crowned Robin-chat	*Cossypha albicapilla*
Forest Scrub-robin	*Erythropygia leucosticta*
Common Redstart	*Phoenicurus phoenicurus*
Whinchat	*Saxicola rubetra*
Common Stonechat	*Saxicola torquatus*
Cliffchat	*Myrmecocichla cinnamomeiventris*
Northern Wheatear	*Oenanthe oenanthe*
White-fronted Black-chat	*Myrmecocichla albifrons*
Narrow-tailed Starling	*Poeoptera lugubris*
Chestnut-winged Starling	*Onychognathus fulgidus*
Emerald Starling	*Coccycolius iris*
Copper-tailed Glossy-starling	*Lamprotornis cupreocauda*
Lesser Blue-eared Glossy-starling	*Lamprotornis chloropterus*
Splendid Glossy-starling	*Lamprotornis splendidus*
Long-tailed Glossy-starling	*Lamprotornis caudatus*
Purple Glossy-starling	*Lamprotornis purpureus*
Violet-backed Starling	*Cinnyricinclus leucogaster*
Yellow-billed Oxpecker	*Buphagus africanus*
Spotted Treecreeper	*Salpornis spilonotus*
Tit-hylia	*Pholidornis rushiae*
White-shouldered Tit	*Parus guineensis*
Dusky Tit	*Parus funereus*
West African penduline Tit	*Remiz parvulus*

Sand Martin	*Riparia riparia*
Banded Martin	*Riparia cincta*
Rock Martin	*Hirundo fuligula*
Barn Swallow	*Hirundo rustica*
Red-chested Swallow	*Hirundo lucida*
Wire-tailed Swallow	*Hirundo smithii*
White-throated Blue Swallow	*Hirundo nigrita*
Pied-winged Swallow	*Hirundo leucosoma*
Lesser Striped-swallow	*Hirundo abyssinica*
Rufous-chested Swallow	*Hirundo semirufa*
Red-rumped Swallow	*Hirundo daurica*
Preuss's Swallow	*Hirundo preussi*
Northern House-martin	*Delichon urbica*
Square-tailed Saw-wing	*Psalidoprocne nitens*
Fanti Saw-wing	*Psalidoprocne obscura*
Common Bulbul	*Pycnonotus barbatus*
Little Greenbul	*Andropadus virens*
Grey Greenbul	*Andropadus gracilis*
Ansorge's Greenbul	*Andropadus ansorgei*
Plain Greenbul	*Andropadus curvirostris*
Slender-billed Greenbul	*Andropadus gracilirostris*
Yellow-whiskered Greenbul	*Andropadus latirostris*
Golden Greenbul	*Calyptocichla serina*
Honeyguide Greenbul	*Baeopogon indicator*
Spotted Greenbul	*Ixonotus guttatus*
Simple Greenbul	*Chlorocichla simplex*
Yellow-throated Greenbul	*Chlorocichla flavicollis*
Swamp Greenbul	*Thescelocichla leucopleura*
Leaf-love	*Pyrrhurus scandens*

Baumann's Greenbul	*Phyllastrephus baumanni*
White-throated Greenbul	*Phyllastrephus albigularis*
Icterine Greenbul	*Phyllastrephus icterinus*
Common Bristlebill	*Bleda syndactylus*
Green-tailed Bristlebill	*Bleda eximius*
Grey-headed Bristlebill	*Bleda canicapillus*
Yellow-spotted Nicator	*Nicator chloris*
Bearded Bulbul	*Criniger barbatus*
Red-tailed Bulbul	*Criniger calurus*
Yellow-bearded Greenbul	*Criniger olivaceus*
Red-faced Cisticola	*Cisticola erythrops*
Singing Cisticola	*Cisticola cantans*
Whistling Cisticola	*Cisticola lateralis*
Chattering Cisticola	*Cisticola anonymus*
Rock-loving Cisticola	*Cisticola emini*
Lazy Cisticola	*Cisticola aberrans*
Red-pate Cisticola	*Cisticola ruficeps*
Winding Cisticola	*Cisticola galactotes*
Croaking Cisticola	*Cisticola natalensis*
Siffling Cisticola	*Cisticola brachypterus*
Zitting Cisticola	*Cisticola juncidis*
Black-necked Cisticola	*Cisticola eximius*
Tawny-flanked Prinia	*Prinia subflava*
White-eyed Prinia	*Prinia leontica*
Red-winged Warbler	*Heliolais erythropterus*
Black-capped Apalis	*Apalis nigriceps*
Yellow-breasted Apalis	*Apalis flavida*
Sharpe's Apalis	*Apalis sharpii*
Oriole Warbler	*Hypergerus atriceps*

Grey-backed Camaroptera	*Camaroptera brevicaudata*
Yellow-browed Camaroptera	*Camaroptera superciliaris*
Olive-green Camaroptera	*Camaroptera chloronota*
African Yellow White-eye	*Zosterops senegalensis*
Black-headed Rufous Warbler	*Bathmocercus cerviniventris*
Moustached Grass-warbler	*Melocichla mentalis*
Common Grasshopper-warbler	*Locustella naevia*
Sedge Warbler	*Acrocephalus schoenobaenus*
Eurasian Reed-warbler	*Acrocephalus scirpaceus*
Great Reed-warbler	*Acrocephalus arundinaceus*
Melodious Warbler	*Hippolais polyglotta*
Senegal Eremomela	*Eremomela pusilla*
Rufous-crowned Eremomela	*Eremomela badiceps*
Green Crombec	*Sylvietta virens*
Lemon-bellied Crombec	*Sylvietta denti*
Northern Crombec	*Sylvietta brachyura*
Kemp's Longbill	*Macrosphenus kempi*
Grey Longbill	*Macrosphenus concolor*
Green Hylia	*Hylia prasina*
Willow Warbler	*Phylloscopus trochilus*
Wood Warbler	*Phylloscopus sibilatrix*
Yellow-bellied Hyliota	*Hyliota flavigaster*
Violet-backed Hyliota	*Hyliota violacea*
Fan-tailed Grassbird	*Schoenicola brevirostris*
Blackcap Illadopsis	*Illadopsis cleaveri*
Rufous-winged Illadopsis	*Illadopsis rufescens*
Puvel's Illadopsis	*Illadopsis puveli*
Pale-breasted Illadopsis	*Illadopsis rufipennis*
Brown Illadopsis	*Illadopsis fulvescens*

Blackcap Babbler	*Turdoides reinwardii*
Brown Babbler	*Turdoides plebejus*
Capuchin Babbler	*Phyllanthus atripennis*
Blackcap	*Sylvia atricapilla*
Garden Warbler	*Sylvia borin*
Subalpine Warbler	*Sylvia cantillans*
Rufous-naped Lark	*Mirafra africana*
Rufous-rumped Lark	*Pinarocorys erythropygia*
Sun Lark	*Galerida modesta*
Scarlet-tufted Sunbird	*Anthreptes fraseri*
Mouse-brown Sunbird	*Anthreptes gabonicus*
Western Violet-backed Sunbird	*Anthreptes longuemarei*
Green Sunbird	*Anthreptes rectirostris*
Collared Sunbird	*Anthreptes collaris*
Pygmy Sunbird	*Anthreptes platurus*
Little Green Sunbird	*Nectarinia seimundi*
Olive Sunbird	*Nectarinia olivacea*
Green-headed Sunbird	*Nectarinia verticalis*
Blue-throated Brown Sunbird	*Nectarinia cyanolaema*
Carmelite Sunbird	*Nectarinia fuliginosa*
Scarlet-chested Sunbird	*Nectarinia senegalensis*
Buff-throated Sunbird	*Nectarinia adelberti*
Variable Sunbird	*Nectarinia venusta*
Olive-bellied Sunbird	*Nectarinia chloropygia*
Tiny Sunbird	*Nectarinia minulla*
Copper Sunbird	*Nectarinia cuprea*
Splendid Sunbird	*Nectarinia coccinigaster*
Johanna's Sunbird	*Nectarinia johannae*
Superb Sunbird	*Nectarinia superba*

Beautiful Sunbird	*Nectarinia pulchella*
Northern Grey-headed Sparrow	*Passer griseus*
Bush Petronia	*Petronia dentata*
White Wagtail	*Motacilla alba*
African Pied Wagtail	*Motacilla aguimp*
Yellow Wagtail	*Motacilla flava*
Mountain Wagtail	*Motacilla clara*
Yellow-throated Longclaw	*Macronyx croceus*
Plain-backed Pipit	*Anthus leucophrys*
Long-billed Pipit	*Anthus similis*
Tree Pipit	*Anthus trivialis*
Red-throated Pipit	*Anthus cervinus*
Tawny Pipit	*Anthus campestris*
Slender-billed Weaver	*Ploceus pelzelni*
Black-necked Weaver	*Ploceus nigricollis*
Orange Weaver	*Ploceus aurantius*
Village Weaver	*Ploceus cucullatus*
Vieillot's Black Weaver	*Ploceus nigerrimus*
Yellow-mantled Weaver	*Ploceus tricolor*
Maxwell's Black Weaver	*Ploceus albinucha*
Preuss's Weaver	*Ploceus preussi*
Compact Weaver	*Ploceus superciliosus*
Gola Malimbe	*Malimbus ballmanni*
Red-vented Malimbe	*Malimbus scutatus*
Gray's Malimbe	*Malimbus nitens*
Crested Malimbe	*Malimbus malimbicus*
Red-headed Malimbe	*Malimbus rubricollis*
Red-headed Quelea	*Quelea erythrops*
Yellow-crowned Bishop	*Euplectes afer*

Black-winged Bishop	*Euplectes hordeaceus*
Yellow-shouldered Widowbird	*Euplectes macroura*
Red-collared Widowbird	*Euplectes ardens*
Cuckoo Finch	*Anomalospiza imberbis*
Grosbeak Weaver	*Amblyospiza albifrons*
Red-fronted Antpecker	*Parmoptila rubrifrons*
Chestnut-breasted Negrofinch	*Nigrita bicolor*
Pale-fronted Negrofinch	*Nigrita luteifrons*
Grey-headed Negrofinch	*Nigrita canicapillus*
White-cheeked Oliveback	*Nesocharis capistrata*
Red-winged Pytilia	*Pytilia phoenicoptera*
Red-faced Pytilia	*Pytilia hypogrammica*
Green-backed Twinspot	*Mandingoa nitidula*
Crimson Seedcracker	*Pyrenestes sanguineus*
Western Bluebill	*Spermophaga haematina*
Dybowski's Twinspot	*Euschistospiza dybowskii*
Bar-breasted Firefinch	*Lagonosticta rufopicta*
Red-billed Firefinch	*Lagonosticta senegala*
Black-bellied Firefinch	*Lagonosticta rara*
African Firefinch	*Lagonosticta rubricata*
Orange-cheeked Waxbill	*Estrilda melpoda*
Common Waxbill	*Estrilda astrild*
Zebra Waxbill	*Amandava subflava*
Bronze Mannikin	*Spermestes cucullatus*
Black-and-white Mannikin	*Spermestes bicolor*
Magpie Mannikin	*Spermestes fringilloides*
African Quailfinch	*Ortygospiza atricollis*
Village Indigobird	*Vidua chalybeata*
Jambandu Indigobird	*Vidua raricola*
Cameroon indigobird	*Vidua camerunensis*

Pin-tailed Whydah	*Vidua macroura*
Togo Paradise-whydah	*Vidua togoensis*
Yellow-fronted Canary	*Serinus mozambicus*
West African Seedeater	*Serinus canicapillus*
Streaky-headed Seedeater	*Serinus gularis*
Ortolan Bunting	*Emberiza hortulana*
Cinnamon-breasted Bunting	*Emberiza tahapisi*
Cabanis's Bunting	*Emberiza cabanisi*

Appendix III - List of mammals of Sierra Leone

Order: Tubulidentata (aardvarks)	
Aardvark	*Orycteropus afer*
Order: Hyracoidea (hyraxes)	
Western tree hyrax	*Dendrohyrax dorsalis*
Order: Proboscidea (elephants)	
African bush elephant	*Loxodonta africana*
Order: Sirenia (manatees and dugongs)	
African manatee	*Trichechus senegalensis*
Order: Primates	
Western chimpanzee	*Pan troglodytes verus*
Patas monkey	*Erythrocebus patas*
Green monkey	*Chlorocebus sabaeus*
Campbell's mona monkey	*Cercopithecus campbelli*
Diana monkey	*Cercopithecus diana*
Lesser spot-nosed monkey	*Cercopithecus petaurista*
Olive baboon	*Papio anubis*
Guinea baboon	*Papio papio*
Sooty mangabey	*Cercocebus atys*
Collared mangabey	*Cercocebus torquatus*
King colobus	*Colobus polykomos*
Red colobus	*Procolobus badius*
Olive colobus	*Procolobus verus*
Potto	*Perodicticus potto*
Prince Demidoff's bushbaby	*Galago demidovii*
Senegal bushbaby	*Galago senegalensis*
Order: Rodentia (rodents)	
African brush-tailed porcupine	*Atherurus africanus*
Crested porcupine	*Hystrix cristata*
Lord Derby's scaly-tailed squirrel	*Anomalurus derbianus*
Beecroft's scaly-tailed squirrel	*Anomalurops beecrofti*
Long-eared flying mouse	*Idiurus macrotis*
Striped ground squirrel	*Xerus erythropus*
Western palm squirrel	*Epixerus ebii*
Fire-footed rope squirrel	*Funisciurus pyrropus*
Gambian sun squirrel	*Heliosciurus gambianus*
Small sun squirrel	*Heliosciurus punctatus*
Red-legged sun squirrel	*Heliosciurus rufobrachium*
Green bush squirrel	*Paraxerus poensis*
Slender-tailed squirrel	*Protoxerus aubinnii*
Forest giant squirrel	*Protoxerus stangeri*
Jentink's dormouse	*Graphiurus crassicaudatus*
Lorrain dormouse	*Graphiurus lorraineus*
Nagtglas's African dormouse	*Graphiurus nagtglasii*
Emin's pouched rat	*Cricetomys emini*
Rusty-bellied brush-furred rat	*Lophuromys sikapusi*
Rudd's mouse	*Uranomys ruddi*
Guinean gerbil	*Gerbilliscus guineae*
Kemp's gerbil	*Gerbilliscus kempi*
African grass rat	*Arvicanthis niloticus*
Guinean grass rat	*Arvicanthis rufinus*

West African shaggy rat	*Dasymys rufulus*
Defua rat	*Dephomys defua*
Bunting's thicket rat	*Grammomys buntingi*
Miller's striped mouse	*Hybomys planifrons*
Temminck's striped mouse	*Hybomys trivirgatus*
Allen's wood mouse	*Hylomyscus alleni*
Baer's wood mouse	*Hylomyscus baeri*
Bellier's striped grass mouse	*Lemniscomys bellieri*
Typical striped grass mouse	*Lemniscomys striatus*
Edward's swamp rat	*Malacomys edwardsi*
Guinea multimammate mouse	*Mastomys erythroleucus*
Natal multimammate mouse	*Mastomys natalensis*
Baoule's mouse	*Mus baoulei*
African pygmy mouse	*Mus minutoides*
Peters's mouse	*Mus setulosus*
Ghana rufous-nosed rat	*Oenomys ornatus*
Dalton's mouse	*Praomys daltoni*
Tullberg's soft-furred mouse	*Praomys tullbergi*
Order: Lagomorpha (lagomorphs)	
African savanna hare	*Lepus microtis*
Order Erinaceomorpha (hedgehogs and gymnures)	
Four-toed hedgehog	*Atelerix albiventris*
Order: Soricomorpha (shrews moles	
Buettikofer's shrew	*Crocidura buettikoferi*
Crosse's shrew	*Crocidura crossei*
Dent's shrew	*Crocidura denti*
Bicolored musk shrew	*Crocidura fuscomurina*
Lamotte's shrew	*Crocidura lamottei*
Mauritanian shrew	*Crocidura lusitania*
West African long-tailed shrew	*Crocidura muricauda*
Nimba shrew	*Crocidura nimbae*
West African pygmy shrew	*Crocidura obscurior*
African giant shrew	*Crocidura olivieri*
Fraser's musk shrew	*Crocidura poensis*
Therese's shrew	*Crocidura theresae*
Climbing shrew	*Sylvisorex megalura*
Order: Chiroptera (bats)	
Straw-coloured fruit bat	*Eidolon helvum*
Gambian epauletted fruit bat	*Epomophorus gambianus*
Buettikofer's epauletted fruit bat	*Epomops buettikoferi*
Hammer-headed bat	*Hypsignathus monstrosus*
Smith's fruit bat	*Lissonycteris smithi*
Peters's dwarf epauletted fruit bat	*Micropteropus pusillus*
Little collared fruit bat	*Myonycteris torquata*
Veldkamp's dwarf epauletted fruit bat	*Nanonycteris veldkampi*
Egyptian fruit bat	*Rousettus aegyptiacus*
Woermann's bat	*Megaloglossus woermanni*
Rufous mouse-eared bat	*Myotis bocagii*
Abo bat	*Glauconycteris poensis*
Moloney's mimic bat	*Mimetillus moloneyi*
Dark-brown serotine	*Neoromicia brunneus*

Cape serotine	*Neoromicia capensis*
Banana pipistrelle	*Neoromicia nanus*
Rendall's serotine	*Neoromicia rendalli*
Somali serotine	*Neoromicia somalicus*
White-winged serotine	*Neoromicia tenuipinnis*
Aellen's pipistrelle	*Pipistrellus inexspectatus*
Tiny pipistrelle	*Pipistrellus nanulus*
Light-winged lesser house bat	*Scotoecus albofuscus*
Dark-winged lesser house bat	*Scotoecus hirundo*
African yellow bat	*Scotophilus dinganii*
White-bellied yellow bat	*Scotophilus leucogaster*
Nut-colored yellow bat	*Scotophilus nux*
Common bent-wing bat	*Miniopterus schreibersii*
Gland-tailed free-tailed bat	*Chaerephon bemmeleni*
Little free-tailed bat	*Chaerephon pumila*
Sierra Leone free-tailed bat	*Mops brachypterus*
Angolan free-tailed bat	*Mops condylurus*
Dwarf free-tailed bat	*Mops nanulus*
Spurrell's free-tailed bat	*Mops spurrelli*
Railer bat	*Mops thersites*
Mauritian tomb bat	*Taphozous mauritianus*
Bate's slit-faced bat	*Nycteris arge*
Gambian slit-faced bat	*Nycteris gambiensis*
Large slit-faced bat	*Nycteris grandis*
Hairy slit-faced bat	*Nycteris hispida*
Large-eared slit-faced bat	*Nycteris macrotis*
Egyptian slit-faced bat	*Nycteris thebaica*

Yellow-winged bat	*Lavia frons*
Halcyon horseshoe bat	*Rhinolophus alcyone*
Rüppell's horseshoe bat	*Rhinolophus fumigatus*
Guinean horseshoe bat	*Rhinolophus guineensis*
Lander's horseshoe bat	*Rhinolophus landeri*
Aba roundleaf bat	*Hipposideros abae*
Benito roundleaf bat	*Hipposideros beatus*
Sundevall's roundleaf bat	*Hipposideros caffer*
Cyclops roundleaf bat	*Hipposideros cyclops*
Sooty roundleaf bat	*Hipposideros fuliginosus*
Giant roundleaf bat	*Hipposideros gigas*
Jones's roundleaf bat	*Hipposideros jonesi*
Noack's roundleaf bat	*Hipposideros ruber*
Order: Pholidota (pangolins)	
Giant pangolin	*Manis gigantea*
Long-tailed pangolin	*Manis tetradactyla*
Tree pangolin	*Manis tricuspis*
Order: Cetacea (whales)	
Common minke whale	*Balaenoptera acutorostrata*
Sei whale	*Balaenoptera borealis*
Bryde's whale	*Balaenoptera brydei*
Blue whale	*Balaenoptera musculus*
Fin whale	*Balaenoptera physalus*
Humpback whale	*Megaptera novaeangliae*
Harbour porpoise	*Phocoena phocoena*
Sperm whale	*Physeter macrocephalus*
Pygmy sperm whale	*Kogia breviceps*

Dwarf sperm whale	*Kogia sima*
Blainville's beaked whale	*Mesoplodon densirostris*
Gervais' beaked whale	*Mesoplodon europaeus*
Cuvier's beaked whale	*Ziphius cavirostris*
Killer whale	*Orcinus orca*
Pygmy killer whale	*Feresa attenuata*
False killer whale	*Pseudorca crassidens*
Short-beaked common dolphin	*Delphinus delphis*
Fraser's dolphin	*Lagenodelphis hosei*
Pantropical spotted dolphin	*Stenella attenuata*
Clymene dolphin	*Stenella clymene*
Striped dolphin	*Stenella coeruleoalba*
Atlantic spotted dolphin	*Stenella frontalis*
Spinner dolphin	*Stenella longirostris*
Rough-toothed dolphin	*Steno bredanensis*
Common bottlenose dolphin	*Tursiops truncatus*
Short-finned pilot whale	*Globicephala macrorhynchus*
Risso's dolphin	*Grampus griseus*
Melon-headed whale D	*Peponocephala electra*
Order: Carnivora (carnivorans)	
Wildcat	*Felis silvestris*
Serval	*Leptailurus serval*
African golden cat	*Profelis aurata*
Lion	*Panthera leo* Extinct
Leopard	*Panthera pardus*
African civet	*Civettictis civetta*
Rusty-spotted genet	*Genetta maculata*

Haussa genet	*Genetta thierryi*
Leighton's linsang	*Poiana leightoni*
African palm civet	*Nandinia binotata*
Marsh mongoose	*Atilax paludinosus*
Common kusimanse	*Crossarchus obscurus*
Slender mongoose	*Galerella sanguinea*
Egyptian mongoose	*Herpestes ichneumon*
White-tailed mongoose	*Ichneumia albicauda*
Gambian mongoose	*Mungos gambianus*
Spotted hyena	*Crocuta crocuta*
Side-striped jackal	*Canis adustus*
African wild dog	*Lycaon pictus* - Extinct
Striped polecat	*Ictonyx striatus*
Ratel	*Mellivora capensis*
Speckle-throated otter	*Lutra maculicollis*
African clawless otter	*Aonyx capensis*
Order: Artiodactyla (even-toed ungulates)	
Common warthog	*Phacochoerus africanus*
Giant forest hog	*Hylochoerus meinertzhageni*
Pygmy hippopotamus	*Choeropsis liberiensis*
Hippopotamus	*Hippopotamus amphibius*
Water chevrotain	*Hyemoschus aquaticus*
Royal antelope	*Neotragus pygmaeus*
Oribi	*Ourebia ourebi*
African buffalo	*Syncerus caffer*
Bongo	*Tragelaphus eurycerus*
Bushbuck	*Tragelaphus scriptus*

Bay duiker	*Cephalophus dorsalis*
Jentink's duiker	*Cephalophus jentinki*
Maxwell's duiker	*Cephalophus maxwellii*
Blue duiker	*Cephalophus monticola*
Black duiker	*Cephalophus niger*
Ogilby's duiker	*Cephalophus ogilbyi*
Red-flanked duiker	*Cephalophus rufilatus*
Yellow-backed duiker	*Cephalophus silvicultor*
Zebra duiker	*Cephalophus zebra*
Common duiker	*Sylvicapra grimmia*
Waterbuck	*Kobus ellipsiprymnus*
Kob	*Kobus kob*