

LIBERIA

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Black Dwarf Hornbill *Tockus hartlaubi*. (ILLUSTRATION: NIK BORROW)

GENERAL INTRODUCTION

The Republic of Liberia is bordered by Sierra Leone to the north-west, Guinea to the north and Côte d'Ivoire to the east. It has a land area of 96,258 km² and a population of 2,575,000 (1990) giving an average population density of 27 per km². The recent political instability has led to a large proportion of the population becoming concentrated in the region of the capital Monrovia. The average annual rate of population increase is 3.26%.

The country is divided administratively into 14 counties. There are 16 major ethnic groups: Grebo, Kru, Krahn, Bassa, Belle, Dei (Kru-speaking), Gio, Mano, Kpelle, Mandingo, Vai, Mende, Gbandi, Loma (Mande-speaking), Gola and Kissi (Mel-speaking). The people of Liberia are primarily subsistence farmers, hunters and fishermen, although land-use activities have diversified in the past four decades to include logging and cash-crop production.

The climate is wet and humid, with 4,750 mm of rain annually in Monrovia, decreasing progressively towards the interior (Harbel 3,450 mm, Totota 2,200 mm, Suakoko 1,900 mm) where the isohyets run approximately parallel with the coast. Rain falls in all months with January and February the driest. Temperature regimes are reasonably constant across the country, with the mean temperature of 24°C in the coolest month and 27°C in the warmest.

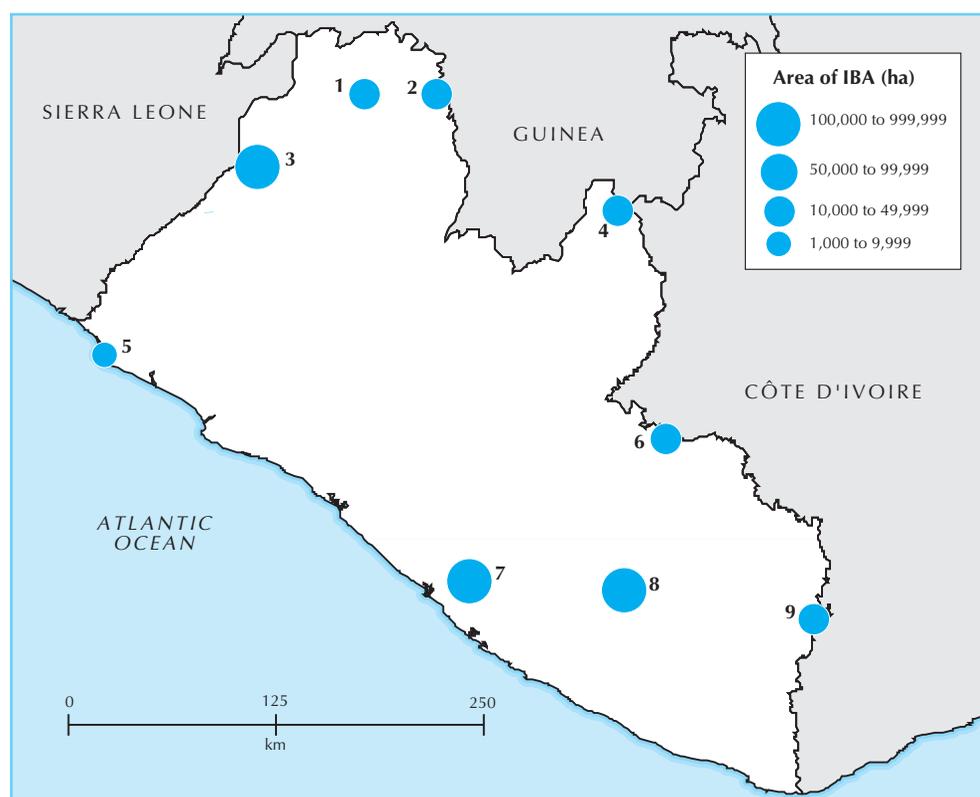
Between 1990 and 1996, Liberia descended into civil war during which its economy and infrastructure were destroyed. All forest management—other than some illegal and indiscriminate logging in places to help fund the war—and conservation activities ceased, while mining operations and hunting also decreased markedly. Much of the population either fled to neighbouring countries or settled around Monrovia, where many still remain. While the war may have had some short-term beneficial effects for wildlife, its cessation, and the urgent need both for feeding the population and for hard currency, has caused a largely uncontrolled rush to exploit natural resources.

Liberia has a 680 km coastline (as measured up inlets to the point at which they becomes less than 1 km wide) but, unlike those of Sierra Leone, Guinea and Guinea-Bissau to the north-west, it does not

include extensive areas of river estuary and mudflats and the amounts of mangrove are relatively restricted (310 km² in total or 0.2% of land area). The lack of intertidal mud- and sandflats is a result of the steepness of the shoreline and the small tidal range of c.1 m. The coast is aligned north-west–south-east and 90% of its length consists of a narrow (20 to 30 m wide) sandy beach, reaching a maximum of 60 to 80 m only in some eastern parts between King William's Point and Grand Cess. There are sand-spits at the mouths of the Mafa, Mofe, Lofa and St John rivers and extensive sandy areas between the Sierra Leone border and Lake Piso, a large coastal lagoon to the east of the town of Robertsport. There are a number of other smaller lagoons, of fresh, brackish and salt water, distributed along the coast. The total area of unvegetated coastal sands is c.2,450 ha. The remaining 10% of the coastline is mainly rocky.

The coastal plain averages 40 km in width and reaches an elevation of between 9 m and 30 m. Its sandy surface is flat or very gently rolling with a few isolated hills rising over to 50 m. The coastal plain is the region of greatest human settlement. Much of it is covered by an anthropogenic vegetation of grassland-forest mosaic, the remains of gallery forest, local patches of primary swamp-forest and areas of secondary forest.

The interior of Liberia consists of rolling hills immediately inland of the coastal plain and separated from it by an escarpment of some 100 m. To the north lie dissected inland plateaus and low mountains. The plateaus are at an altitude of about 300 m with low mountains rising to some 600 m. In the northern parts of Lofa and Nimba counties lies a highland region which represent southern outliers of the Guinea Highlands. The Wologizi Range reaches 1,447 m at the peak of Mount Wuteve. Inselbergs rise to as much as 300 m above the surrounding terrain in the western and northern parts of the area. The Nimba Range forms part of a mountain chain which straddles the meeting point of the borders of Liberia, Guinea and Côte d'Ivoire. The Liberian part of the range is 20 km long and reaches a maximum altitude of 1,385 m. The country is drained by a series of rivers which flow from the north-east to the south-west. Their alignment is thus largely parallel; two exceptions, however,



Map 1. Location and size of Important Bird Areas in Liberia.

are the Cavalla river and its tributary the Duobe in the east of the country, which flow in a south-easterly direction for much of their length.

The major vegetation-type of the interior of the country is closed forest, which once covered almost all of its land surface. Even today, forest covers over 40% of the country with some 42,000 km² of high forest remaining, about 43% of the forest extant in the Upper Guinea region. Evergreen forests are found in the wetter south and central areas of the country, giving way to moist semi-deciduous forests in the drier north-western parts. A small area of montane forest occurs on the Nimba mountains. However, deforestation rates were estimated at 46,000 ha per annum (2.3%) in 1980 and 2% in 1991, as a result of both commercial logging and shifting cultivation. In 1980, some 3,277,000 m³ of hardwood was produced, of which 475,000 m³, with a value of \$84 million, was exported, representing 11.3% of all export earnings. By 1987, virtually all high forests, other than those in Sapo National Park, had been leased for logging concessions. Although the civil war brought an end to these and logging overall was reduced during the war years, since its cessation further concessions have been awarded, amounting to approximately two-thirds of Liberia's forests; construction of new roads and extraction of timber is well under

way. There still remain, however, large areas in Lofa, Sinoe and Grand Gedeh counties where logging has, as yet, barely been seen.

Most of the remaining land area (47%) consists of farmland and secondary regrowth under fallow in the farming cycle. There are also small areas of savanna (0.2%). These include a limited area of Guinea Savanna woodland in the north-west, north of the Wologizi mountains. Other vegetation-types include plantations (1.7%) and grassland (0.2%).

There are no major inland wetlands in Liberia, a consequence of the fact that the terrain slopes fairly constantly from the high northern border to the sea. There are narrow zones of inundation along some rivers but, as rainfall is not markedly seasonal, there are no major flood-plains. Non-forested swampland covers only 0.1% of the land area.

ORNITHOLOGICAL IMPORTANCE

A total of 615 species have been recorded from Liberia, of which some 125 are Palearctic migrants. Amongst these are 21 species of global conservation concern, only three of which are not resident: *Circus macrourus*, *Falco naumanni* and *Gallinago media* are all rare or uncommon migrants from the Palearctic. The remainder, *Agelastes meleagrides*, *Scotopelia ussheri*, *Ceratogymna cylindricus*, *C. elata*, *Melignomon eisentrauti*, *Campephaga lobata*, *Phyllastrephus baumanni*, *P. leucolepis*, *Bleda eximia*, *Criniger olivaceus*, *Malaconotus lagdeni*, *Illadopsis rufescens*, *Picathartes gymnocephalus*, *Prinia leontica*, *Bathmocercus cerviniventris*, *Melaenornis annamarulae*, *Malimbus ballmanni* and *Lamprotornis cupreocauda*, are all species of forest habitats. Fourteen of these are also species of restricted-range; almost the whole of Liberia falls within the Upper Guinea forests Endemic Bird Area (EBA 084) and all of its 15 species occur. Liberia also lies entirely within the Guinea–Congo Forests biome (A05) and 184 species characteristic of the biome have been recorded. *Phyllastrephus leucolepis*, discovered in 1981, has only ever been recorded from a limited area in the east of the country, while *Malimbus ballmanni* is almost entirely confined to Liberia, its range extending just into western Côte d'Ivoire and eastern Sierra Leone. All of this underlines the ornithological importance of Liberia's forests.

By contrast, Liberia's coastal wetlands are limited in extent and, in comparison with those of Sierra Leone and Guinea, are of relatively little importance ornithologically. There are no significant

Table 1. Summary of Important Bird Areas in Liberia.

9 IBAs covering 5,806 km ²			Criteria (see p. 11; for A2/A3 codes, see Tables 2/3)			
IBA code	Site name	Administrative region	A1	A2	A3	A4i
			084	084	A05	
LR001	Wologizi mountains	Lofa	✓	✓	✓	
LR002	Wonegizi mountains	Lofa	✓	✓	✓	
LR003	Lofa–Mano	Lofa, Grand Cape Mount	✓	✓	✓	
LR004	Nimba mountains	Nimba	✓	✓	✓	
LR005	Cape Mount	Grand Cape Mount			✓	✓
LR006	Zwedru	Grand Gedeh	✓	✓	✓	
LR007	Cestos–Senkwen	Grand Bassa, Sinoe	✓	✓	✓	
LR008	Sapo	Sinoe	✓	✓	✓	
LR009	Cavalla river	Grand Gedeh	✓	✓	✓	
Total number of IBAs qualifying:			8	8	9	1

Table 2. The occurrence of restricted-range species at Important Bird Areas in Liberia. Sites that meet the A2 criterion are highlighted in **bold**. Species of global conservation concern are highlighted in **bold blue**.

084 – Upper Guinea forests Endemic Bird Area (15 species in Liberia; eight sites meets the A2 criterion)									
IBA code:	001	002	003	004	005	006	007	008	009
<i>Agelastes meleagrides</i>			✓	✓		✓	✓	✓	✓
<i>Scotopelia ussheri</i>				✓		✓			
<i>Ceratogymna cylindricus</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Campephaga lobata</i>			✓	✓			✓		✓
<i>Phyllastrephus leucolepis</i>						✓			
<i>Bleda eximia</i>	✓	✓		✓		✓	✓	✓	✓
<i>Criniger olivaceus</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Illadopsis rufescens</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Picathartes gymnocephalus</i>	✓	✓	✓	✓		✓		✓	
<i>Prinia leontica</i>				✓					
<i>Apalis sharpei</i>	✓	✓	✓	✓		✓		✓	✓
<i>Bathmocercus cerviniventris</i>	✓	✓		✓		✓			✓
<i>Melaenornis annamarulae</i>	✓			✓					
<i>Malimbus ballmanni</i>							✓	✓	✓
<i>Lamprotornis cupreocauda</i>	✓	✓	✓	✓	✓	✓	✓		✓
Number of species recorded:	9	8	8	13	1	12	8	8	9

inland wetlands, although the remaining forested rivers are significant for a distinctive group of species, including a recently discovered breeding population of *Rynchops flavirostris*.

CONSERVATION INFRASTRUCTURE AND PROTECTED-AREA SYSTEM

Forest and wildlife comes under the remit of the Forestry Development Authority, with the Wildlife and National Parks Division having responsibility for wildlife conservation. The Forest Conservation Acts of 1953 and 1957 covered conservation of the forest estate, but were repealed when they were superseded in 1976 by the act which created the Forestry Development Authority. The Wildlife and National Parks Act was enacted in 1988 and identified a number of protected areas and specified policies and objectives regarding wildlife conservation. More recently, new forestry laws were enacted on 20 June 2000, which also concern control of wildlife, National Parks and other protected areas.

There are 10 National Forests (areas to be managed for timber production in perpetuity) and one National Park, Sapo, which, on paper, give some measure of protection to about 14% of the total area of the country and 30% of the closed forest. A number of other National Parks and Nature Reserves have been proposed during the last two decades, but none have yet been gazetted. The civil war left the one existing protected area unmanaged and unprotected.

Table 3. The occurrence of biome-restricted species at Important Bird Areas in Liberia. Sites that meet the A3 criterion are highlighted in **bold**. Species of global conservation concern are highlighted in **bold blue**. Any other species with a restricted range are highlighted in blue.

A05 – Guinea–Congo Forests biome (184 species in Liberia; nine sites meet the A3 criterion)									
IBA code:	001	002	003	004	005	006	007	008	009
<i>Tigriornis leucolophus</i>		✓		✓	✓	✓	✓	✓	✓
<i>Bostrychia rara</i>	✓	✓		✓		✓			
<i>Pteronetta hartlaubi</i>	✓		✓	✓		✓		✓	✓
<i>Dryotriorchis spectabilis</i>	✓		✓	✓		✓			✓
<i>Accipiter erythropus</i>	✓	✓	✓	✓	✓	✓			
<i>Urotriorchis macrourus</i>	✓	✓	✓	✓		✓			✓
<i>Spizaetus africanus</i>	✓	✓	✓	✓		✓			✓
<i>Francolinus lathamii</i>	✓		✓	✓		✓		✓	✓
<i>Francolinus achantensis</i>	✓	✓		✓		✓	✓		✓
<i>Agelastes meleagrides</i>			✓	✓		✓	✓	✓	✓
<i>Sarothrura pulchra</i>	✓	✓	✓	✓		✓			✓
<i>Himantornis haematopus</i>				✓		✓			✓
<i>Canirallus oculus</i>		✓	✓	✓		✓			✓
<i>Columba uncinata</i>	✓	✓	✓	✓		✓	✓		✓
<i>Columba iriditorques</i>	✓	✓		✓		✓	✓		✓
<i>Turtur brehmeri</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Psittacus erithacus</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Agapornis swindermanianus</i>							✓		
<i>Tauraco persa</i>	✓	✓		✓				✓	
<i>Tauraco macrorhynchus</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Cercococcyx mechowi</i>	✓	✓	✓	✓		✓			
<i>Cercococcyx olivinus</i>	✓		✓	✓		✓			✓
<i>Chrysococcyx flavigularis</i>	✓	✓				✓			
<i>Centropus leucogaster</i>	✓	✓	✓	✓	✓	✓	✓	✓	
<i>Otus icterorhynchus</i>		✓		✓		✓			✓
<i>Bubo poensis</i>	✓		✓	✓		✓			✓
<i>Bubo shelleyi</i>			✓	✓		✓			
<i>Bubo leucostictus</i>	✓	✓		✓		✓			✓
<i>Scotopelia ussheri</i>				✓		✓			
<i>Jubula lettii</i>				✓					
<i>Glauclidium tephronotum</i>	✓	✓		✓		✓			✓
<i>Caprimulgus binotatus</i>				✓					
<i>Caprimulgus nigriscapularis</i>	✓								
<i>Telacanthura melanopygia</i>				✓		✓		✓	✓
<i>Rhaphidura sabini</i>	✓	✓	✓	✓		✓			✓
<i>Neafrapus cassini</i>	✓	✓	✓	✓		✓		✓	✓
<i>Apus batesi</i>	✓	✓		✓					

IBA code:	001	002	003	004	005	006	007	008	009
<i>Alcedo leucogaster</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Ispidina lecontei</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Halcyon badia</i>	✓	✓	✓	✓		✓		✓	✓
<i>Merops gularis</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Merops muelleri</i>	✓	✓	✓	✓		✓			✓
<i>Eurystomus gularis</i>	✓	✓	✓	✓		✓	✓		✓
<i>Phoeniculus castaneiceps</i>	✓			✓		✓			✓
<i>Tockus albocristatus</i>	✓	✓	✓	✓		✓		✓	✓
<i>Tockus hartlaubi</i>		✓	✓	✓		✓		✓	✓
<i>Tockus camurus</i>	✓	✓	✓	✓		✓		✓	✓
<i>Tockus fasciatus</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Ceratogymna fistulator</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Ceratogymna subcylindricus</i>						✓			
<i>Ceratogymna cylindricus</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Ceratogymna atrata</i>			✓	✓		✓	✓	✓	✓
<i>Ceratogymna elata</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Gymnabucco calvus</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Gymnabucco peli</i>				✓		✓			
<i>Pogoniulus scolopaceus</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Pogoniulus atroflavus</i>	✓	✓	✓	✓	✓	✓	✓		✓
<i>Pogoniulus subsulphureus</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Buccanodon duchailloi</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Tricholaema hirsuta</i>	✓	✓		✓	✓	✓	✓		✓
<i>Trachyphonus purpuratus</i>	✓	✓	✓	✓		✓	✓		✓
<i>Indicator maculatus</i>	✓	✓				✓			✓
<i>Indicator willcocksi</i>	✓			✓		✓			
<i>Melichneutes robustus</i>		✓	✓	✓		✓			✓
<i>Melignomon eisentrauti</i>				✓					
<i>Prodotiscus insignis</i>	✓	✓		✓		✓			✓
<i>Sasia africana</i>						✓			
<i>Campethera maculosa</i>	✓	✓		✓		✓	✓		✓
<i>Campethera nivosa</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Campethera caroli</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Dendropicus gabonensis</i>	✓	✓		✓	✓	✓	✓		
<i>Dendropicus pyrrhogaster</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Smithornis rufofasciatus</i>	✓	✓		✓		✓	✓	✓	✓
<i>Hirundo nigrita</i>	✓		✓	✓		✓	✓	✓	✓

Table 3 ... continued. The occurrence of biome-restricted species at Important Bird Areas in Liberia. Sites that meet the A3 criterion are highlighted in **bold**. Species of global conservation concern are highlighted in **bold blue**. Any other species with a restricted range are highlighted in blue.

A05 – Guinea–Congo Forests biome ... continued (184 species in Liberia; nine sites meet the A3 criterion)									
IBA code:	001	002	003	004	005	006	007	008	009
<i>Psalidoprocne nitens</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Psalidoprocne obscura</i>				✓		✓	✓		
<i>Coracina azurea</i>	✓	✓	✓	✓		✓		✓	✓
<i>Campephaga lobata</i>			✓	✓			✓		✓
<i>Andropadus gracilis</i>	✓	✓	✓	✓		✓	✓		✓
<i>Andropadus ansorgei</i>	✓	✓		✓		✓			✓
<i>Andropadus curvirostris</i>	✓		✓	✓	✓	✓			✓
<i>Calyptocichla serina</i>	✓	✓		✓		✓			✓
<i>Baeopogon indicator</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Ixonotus guttatus</i>	✓	✓	✓	✓		✓			✓
<i>Chlorocichla simplex</i>	✓	✓	✓	✓	✓	✓	✓		✓
<i>Thesolocichla leucopleura</i>	✓	✓	✓	✓	✓	✓	✓		✓
<i>Phyllastrephus scandens</i>	✓	✓		✓					
<i>Phyllastrephus baumanni</i>	✓			✓					
<i>Phyllastrephus albigularis</i>				✓	✓				
<i>Phyllastrephus icterinus</i>	✓	✓	✓	✓	✓	✓		✓	✓
<i>Phyllastrephus leucolepis</i>						✓			
<i>Bleda syndactyla</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Bleda eximia</i>	✓	✓		✓		✓	✓	✓	✓
<i>Bleda canicapilla</i>	✓	✓	✓	✓		✓	✓		✓
<i>Nicator chloris</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Criniger barbatus</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Criniger calurus</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Criniger olivaceus</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Dryoscopus sabinii</i>	✓	✓		✓		✓	✓	✓	✓
<i>Laniarius leucorhynchus</i>	✓	✓		✓	✓	✓			
<i>Malaconotus cruentus</i>	✓	✓	✓	✓		✓			
<i>Prionops caniceps</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Neocossyphus fraseri</i>	✓	✓	✓	✓		✓	✓	✓	
<i>Neocossyphus poensis</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Zoothera princei</i>	✓	✓		✓		✓	✓	✓	
<i>Alethe diademata</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Stiphornis erythrothorax</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Sheppardia cyornithopsis</i>	✓	✓		✓				✓	
<i>Cossypha cyanocampter</i>	✓			✓	✓				
<i>Cercotrichas leucosticta</i>	✓	✓		✓		✓	✓		
<i>Illadopsis cleaveri</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Illadopsis rufescens</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Illadopsis puveli</i>	✓	✓		✓		✓			
<i>Illadopsis fulvescens</i>	✓	✓	✓	✓	✓	✓	✓		✓
<i>Phyllanthus atripennis</i>	✓	✓	✓	✓	✓		✓		
<i>Picathartes gymnocephalus</i>	✓	✓	✓	✓		✓		✓	
<i>Prinia leontica</i>				✓					
<i>Apalis nigriceps</i>	✓	✓		✓					
<i>Apalis sharpei</i>	✓	✓	✓	✓		✓		✓	✓
<i>Camaroptera supercilialis</i>	✓	✓	✓	✓		✓			✓
<i>Camaroptera chloronota</i>	✓	✓		✓	✓	✓	✓	✓	✓
<i>Bathmocercus cerviniventris</i>	✓	✓		✓		✓		✓	✓
<i>Eremomela badiceps</i>	✓	✓	✓	✓		✓			✓
<i>Sylvietta virens</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Sylvietta denti</i>	✓	✓		✓		✓			✓
<i>Macrospenus kempii</i>	✓	✓		✓	✓	✓	✓		✓
<i>Macrospenus concolor</i>	✓	✓		✓	✓	✓			✓
<i>Hylia prasina</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Hylia violacea</i>	✓		✓	✓	✓	✓			✓
<i>Melaenornis annamarulae</i>	✓			✓					

IBA code:	001	002	003	004	005	006	007	008	009
<i>Fraseria ocreata</i>	✓	✓	✓	✓		✓		✓	✓
<i>Fraseria cinerascens</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Muscicapa ussheri</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Muscicapa olivascens</i>	✓	✓		✓		✓			✓
<i>Muscicapa epulata</i>	✓		✓	✓		✓			✓
<i>Muscicapa comitata</i>	✓			✓		✓		✓	
<i>Muscicapa tessmanni</i>									
<i>Muscicapa cassini</i>	✓			✓	✓	✓	✓	✓	✓
<i>Myioparus griseigularis</i>				✓					
<i>Bias flammulatus</i>	✓	✓	✓	✓	✓	✓		✓	✓
<i>Batis occultus</i>				✓		✓			
<i>Platysteira castanea</i>	✓	✓		✓	✓	✓	✓	✓	✓
<i>Platysteira blissetti</i>	✓	✓		✓	✓	✓	✓		✓
<i>Erythrocerus mccallii</i>	✓	✓	✓	✓		✓			✓
<i>Trochocercus nigromitratus</i>	✓	✓		✓		✓	✓		✓
<i>Trochocercus nitens</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Terpsiphone rufiventris</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Parus funereus</i>				✓		✓			
<i>Anthoscopus flavifrons</i>	✓			✓					
<i>Anthreptes fraseri</i>	✓	✓	✓	✓	✓	✓		✓	✓
<i>Anthreptes gabonicus</i>			✓		✓	✓	✓		✓
<i>Anthreptes rectirostris</i>	✓	✓	✓	✓	✓	✓			✓
<i>Nectarinia seimundi</i>	✓			✓		✓		✓	✓
<i>Nectarinia batesi</i>						✓			
<i>Nectarinia reichenbachii</i>					✓				
<i>Nectarinia cyanoaema</i>	✓	✓		✓	✓	✓			✓
<i>Nectarinia fuliginosa</i>	✓			✓	✓		✓		
<i>Nectarinia adelberti</i>	✓	✓		✓	✓	✓	✓	✓	✓
<i>Nectarinia minulla</i>	✓	✓	✓	✓		✓			✓
<i>Nectarinia johannae</i>	✓	✓		✓		✓	✓		✓
<i>Nectarinia superba</i>	✓	✓		✓	✓	✓	✓		✓
<i>Pholidornis rushiae</i>	✓		✓	✓		✓			✓
<i>Parmoptila rubrifrons</i>		✓		✓		✓		✓	✓
<i>Nigrita fusconota</i>	✓			✓		✓	✓	✓	✓
<i>Nigrita bicolor</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Nigrita luteifrons</i>									
<i>Pyrenestes sanguineus</i>	✓	✓		✓	✓	✓			✓
<i>Spermophaga haematina</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Ploceus aurantius</i>					✓		✓		
<i>Ploceus nigerimus</i>	✓	✓		✓	✓	✓			✓
<i>Ploceus tricolor</i>	✓	✓		✓		✓	✓	✓	✓
<i>Ploceus albinucha</i>	✓	✓		✓		✓		✓	✓
<i>Ploceus preussi</i>	✓	✓		✓		✓			
<i>Malimbus ballmanni</i>						✓	✓	✓	
<i>Malimbus scutatus</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Malimbus nitens</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Malimbus malimbicus</i>	✓	✓	✓	✓		✓	✓	✓	✓
<i>Malimbus rubricollis</i>		✓	✓	✓		✓		✓	✓
<i>Poeoptera lugubris</i>	✓	✓		✓		✓			✓
<i>Onychognathus fulgidus</i>	✓		✓	✓		✓			✓
<i>Lamprotornis cupreocauda</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Oriolus brachyrhynchus</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Oriolus nigripennis</i>	✓	✓	✓	✓		✓			✓
<i>Dicurus atripennis</i>	✓	✓	✓	✓		✓	✓	✓	✓
Number of species recorded:	149	133	100	171	51	160	90	85	133

Hunting has severely depleted Liberia’s fauna and has brought some of the larger mammal species near to extinction. Although in theory there are strict controls on hunting, in practice there are virtually none and gun-ownership is widespread. It is believed that 80% of the population depend on bush-meat as a major source of protein and so over-hunting is likely to result in food shortages in the long-term.

INTERNATIONAL MEASURES RELEVANT TO THE CONSERVATION OF SITES

Liberia has ratified the Convention on Biological Diversity, CITES and the Convention to Combat Desertification. At the regional level, Liberia has ratified the African Convention on the Conservation of Nature and Natural Resources.

OVERVIEW OF THE INVENTORY

Nine Important Bird Areas (IBAs) have been identified, covering 5,806 km² or 6% of the land surface (Map 1, Table 1). Unsurprisingly, all sites identified contain substantial areas of forest, only one site also qualifying for congregations of waterbirds. All nine sites qualify as being representative of the Guinea–Congo Forests biome (A05) (Table 3). Eight of the nine also qualify for both the globally threatened and restricted-range species that they hold (Table 2). All species of global conservation concern, all those of restricted range and almost all those of the Guinea–Congo Forests biome assemblage that are known from Liberia are represented in at least one site. However, site-specific avifaunal information has been hard to come by. In many cases the presence of species at sites is inferred from what is known of species' distributions in the region or from areas adjacent to the site; Gatter's (1997) atlas proved extremely useful in this regard. This lack of precision is reflected in the wording used in the box for key species within the site accounts. It is clear, however,

that further survey work is needed to confirm the importance of these sites, particularly in the light of the civil war which necessarily means that much of the information presented here may well be out of date, inaccurate or, indeed, incorrect. Surveys would unquestionably identify additional sites; in particular, more information is needed on the status of the only known site (site LR006) for *Phyllastrephus leucolepis* and further sites need to be found for the species, if possible. At least one other site is needed for *Malimbus ballmanni* in the northern part of Grebo National Forest in the eastern part of the species' range in the country, while its occurrence within the limits of Lofa-Mano (site LR003) in the west needs to be established; if not, more site(s) to the south should be sought.

ACKNOWLEDGEMENTS

Jamison Suter and Ben Donnie kindly provided information and commented on the draft.

SITE ACCOUNTS

Wologizi mountains

Admin region Lofa

Coordinates 08°10'N 09°55'W

Area 20,200 ha Altitude c.600–1,447 m

LR001

A1, A2 (084), A3 (A05)

Unprotected

Site description

The Wologizi mountains are an isolated area of upland located in north-west of the country, to the south of the town of Voinjama. The area includes Liberia's highest mountain, Mount Wuteve (Wutuwi) at 1,447 m, as well as several other peaks, including Mount Balagizi (1,100 m). The mountains extend for 22 km with spurs reaching up to 5 km on either side of the ridge. Slopes on the ridge are exceedingly steep and in places form sheer cliffs up to 100 m high. Lower parts are covered with relatively open forest in which trees such as *Lophira*, *Pycnanthus*, *Tarrietia*, *Albizia*, *Samanea* and *Cryptosepalum* spp. are common. With increasing altitude, tree-height decreases and the understorey becomes denser. Above 1,000 m the dominant tree species—*Parinari* and *Ouratea* spp.—are stunted and short, and areas of dense bush and grass are more common. The foothills and lower valleys are surrounded by large areas of savanna woodland.

Birds

See Box and Tables 2 and 3 for key species.

Key species

A1	<i>Ceratogymna cylindricus</i>	<i>Illadopsis rufescens</i>
	<i>Ceratogymna elata</i>	<i>Picathartes gymnocephalus</i>
	<i>Phyllastrephus baumanni</i>	<i>Bathmocercus cerviniventris</i>
	<i>Bleda eximia</i>	<i>Melaenornis annamarulae</i>
	<i>Criniger olivaceus</i>	<i>Lamprotornis cupreocauda</i>
A2 (084)	Upper Guinea forests EBA: Nine of the 15 species of this EBA that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 2.	
A3 (A05)	Guinea–Congo Forests biome: 149 of the 184 species of this biome that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 3.	

Other threatened/endemic wildlife

Mammals include *Loxodonta africana* (EN) and *Pan troglodytes* (EN).

Conservation issues

An earlier proposal for the area to be designated a National Park was made again in 2000, but no action has yet been taken. The Wologizi mountains are rich in iron ore and the area was prospected intensively in the 1970s. Roads were built and a settlement called Alabama or LISCO Camp was established on the western side of the mountain. Fire also destroyed the forest and other vegetation on the summit of Mount Wuteve (but not the other peaks) at this time. Although the iron ore remains unworked and the infrastructure has been abandoned, the possibility still exists that interest will be renewed in the future. Other threats include the effects of the continuing instability in the area and in neighbouring parts of Sierra Leone and Guinea, hunting and the possibility of logging.

Further reading

Gatter (1997).

Wonegizi mountains

Admin region Lofa

Coordinates 08°10'N 09°32'W

Area 20,235 ha Altitude c.500–1,145 m

LR002

A1, A2 (084), A3 (A05)

Unprotected

Site description

The Wonegizi mountains are situated in the north-west of the country against the international frontier with Guinea. The Wonegizi range, which includes the third-highest point in Liberia, is a southern spur of the Guinea Highlands and the site is contiguous with the Massif du Ziama Biosphere Reserve (GN016) in Guinea. The terrain is rugged with broad cliffs and rocky outcrops. The vegetation consists mainly of semi-deciduous forest, similar in composition to that found on the Wologizi mountains (LR001), some 50 km to the west. The sites spans a still largely intact transition from lowland rainforest to semi-montane *Parinari*-dominated forest at altitude.

Birds

See Box and Tables 2 and 3 for key species.

Key species

A1	<i>Ceratogymna cylindricus</i>	<i>Illadopsis rufescens</i>
	<i>Ceratogymna elata</i>	<i>Picathartes gymnocephalus</i>
	<i>Bleda eximia</i>	<i>Bathmocercus cerviniventris</i>
	<i>Criniger olivaceus</i>	<i>Lamprotornis cupreocauda</i>
A2 (084)	Upper Guinea forests EBA: Eight of the 15 species of this EBA that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 2.	
A3 (A05)	Guinea–Congo Forests biome: 133 of the 184 species of this biome that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 3.	

Other threatened/endemic wildlife

Mammals that have been recorded include *Loxodonta africana* (EN), *Pan troglodytes* (EN), *Tragelaphus euryceros* (LR/nt) and *Cephalophus zebra* (VU).

Conservation issues

An earlier proposal for the area to be designated a National Park was made again in 2000, but no action has yet been taken. The area remains unlogged, largely because of the terrain. However, prior to the civil war, attempts were being made to obtain a logging concession for the north-western side of Wonegizi. With the return of political stability the threat of logging is likely to be renewed. There are no villages within the proposed reserve, but many around its borders. Forest clearance for shifting cultivation is likely to be a problem. Other threats include the affects of the continuing instability in the area and in neighbouring parts of Sierra Leone and Guinea, as well as hunting.

Further reading

Gatter (1997), Kofron and Chapman (1995), Verschuren (1983).

Lofa–Mano

Admin region Lofa, Grand Cape Mount

Coordinates 07°47'N 10°30'W

Area 210,650 ha Altitude c.150–800 m

LR003

A1, A2 (084), A3 (A05)

Unprotected

Site description

This proposed National Park includes part of Gola National Forest. It is situated in western Liberia between the Lofa and Mano rivers which, with their tributaries, drain the park. The international frontier with Sierra Leone forms the western boundary of the site, where it is contiguous with the Gola Forest Reserves IBA in Sierra Leone (SL010). The proposed park covers a large area of rainforest, evergreen in the south, becoming progressively more semi-deciduous to the north. The park also includes large patches of low bush, marshes and some savanna on lateritic soil. The region consists of a series of ridges of rounded hillocks with, in places, steep, bare, rocky slopes and river valleys. The rivers are characterized by spectacular rapids and waterfalls and are usually unfordable. The human population within the park is very low and the vegetation remains largely unmodified.

Birds

See Box and Tables 2 and 3 for key species. It is possible that part of the western population of *Malimbus ballmanni* will be found to occur.

Key species

A1	<i>Agelastes meleagrides</i>	<i>Criniger olivaceus</i>
	<i>Ceratogymna cylindricus</i>	<i>Illadopsis rufescens</i>
	<i>Ceratogymna elata</i>	<i>Picathartes gymnocephalus</i>
	<i>Campephaga lobata</i>	<i>Lamprotornis cupreocauda</i>
A2 (084)	Upper Guinea forests EBA: Eight of the 15 species of this EBA that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 2.	
A3 (A05)	Guinea–Congo Forests biome: 100 of the 184 species of this biome that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 3.	

Other threatened/endemic wildlife

Mammals recorded include *Loxodonta africana* (EN), *Hexaprotodon liberiensis* (VU), *Pan troglodytes* (EN) and *Cercopithecus diana* (VU).

Conservation issues

The area was proposed as a National Park in 1983. Prior to the outbreak of the civil war the main threats came from the development of a railway line and a proposed iron-ore pipeline, connecting LISCO mines to the north with a planned new harbour at Robertsport. There was also a proposal for the construction of a hydroelectric dam on the Mano river. However, the main areas that would have been flooded are outside the proposed park and, indeed, the dam would have provided a solid economic argument for conserving the forest upstream, to protect the water catchment. With the return of political stability, these proposed developments may recur. More likely is the threat from logging; although hitherto unlogged, there were plans for logging concessions in parts of the south-east, where part of the proposed park overlaps with Kpelle National Forest.

Further reading

Gatter (1997), Verschuren (1983).

Nimba mountains

Admin region Nimba

Coordinates 07°32'N 08°32'W

Area 20,240 ha Altitude c.400–1,385 m National Forests, Unprotected

LR004

A1, A2 (084), A3 (A05)

Site description

The Nimba mountains, which extend for some 40 km along a south-west–north-east alignment in the north-east of the country, are shared jointly with Côte d'Ivoire and Guinea. The highest peak, 1,752 m, is shared between Guinea and Côte d'Ivoire. Rather less than half, the south-western part, of the mountain chain is Liberian territory. The isolated situation of the Nimba mountains gives them the character of

an enormous inselberg. The site is contiguous with both IBAs GN017 and CI003, in Guinea and Côte d'Ivoire respectively.

The slopes of the ridge are steep and extensively forested. The lower slopes are covered with mixed forest which grades, at 800–900 m, into *Parinari* cloud-forest, characterized by *Parinari excelsa* and many epiphytes. Above 1,200 m, on the peaks and ridges, the character of the forest changes again to montane forest dominated by *Parinari excelsa* and *Garcinia polyantha* with gnarled and stunted trees, seldom exceeding 9–10 m in height. In moist places, at about 1,000 m, there are several small areas with almost pure stands of the tree-fern *Cyathea cylindrica*. This, at least, is how Liberian Nimba used to be; much of the forest has now been destroyed through mining operations—see below.

There are some isolated patches of grassland savanna, particularly at the foot of the western side of central Nimba. These grasslands extend into and are more extensive in Guinea. *Hyparrhenia diplandra* is the dominant grass, with *Andropogon macrophyllus* colonizing termite mounds. On the eastern slopes the vegetation merges into lowland forest. Dense cloud covers the Nimba mountains above 850 m for much of the year, and the average annual rainfall on Liberian Nimba is 3,000 mm. The wettest months are during May–October.

Birds

See Box and Tables 2 and 3 for key species. The forest avifauna of the Nimba mountains is extremely rich, although the current status of many of these species in the Liberian part is, as a result of the effects of mining, unclear. It is probable that *Agelastes meleagrides* at least no longer occurs. This is the only site in the country from which *Prinia leontica* is known.

Key species

A1	<i>Agelastes meleagrides</i>	<i>Criniger olivaceus</i>
	<i>Scotopelia ussheri</i>	<i>Malaconotus lagdeni</i>
	<i>Ceratogymna cylindricus</i>	<i>Illadopsis rufescens</i>
	<i>Ceratogymna elata</i>	<i>Picathartes gymnocephalus</i>
	<i>Melignomon eisentrauti</i>	<i>Prinia leontica</i>
	<i>Campephaga lobata</i>	<i>Bathmocercus cerviniventris</i>
	<i>Phyllastrephus baumanni</i>	<i>Melaenorhynchus annamarulae</i>
	<i>Bleda eximia</i>	<i>Lamprotornis cupreocauda</i>
A2 (084)	Upper Guinea forests EBA: 13 of the 15 species of this EBA that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 2.	
A3 (A05)	Guinea–Congo Forests biome: 171 of the 184 species of this biome that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 3.	

Other threatened/endemic wildlife

The floristic and faunistic importance of the Nimba mountains is considerable. Endemic flora include the fern *Asplenium schnelli* and the flowering plants *Blaeria nimbana*, *Osbeckia porteresii* and *Dolichos nimbaensis*. More than 500 species of fauna new to science have been described from specimens collected in the Nimba mountains, mostly however from the Guinean and Ivoirian territory. Endemics include the amphibian *Schoutedenella nimbaensis*, known only from the type-locality in Guinea, the viviparous toad *Nimbaphrynoides occidentalis* (EN) and the small mammal *Micropotamogale lamottei* (EN). Other, non-endemic, mammals of conservation concern include *Colobus polykomos* (LR/nt), *Procolobus badius* (LR/nt), *Cercopithecus diana* (VU), *Pan troglodytes* (EN), *Syncerus caffer* (LR/cd), *Hexaprotodon liberiensis* (VU), *Genetta johnstoni* (DD) and *Cephalophus jentinki* (VU). The current status of these on the Liberian side of the border is unknown.

Conservation issues

Part of the site was proposed as a Nature Reserve in 1983. The area includes two small National Forests, Nimba East and Nimba West. Over the last 30 years, mining of the extremely rich iron-ore deposits has destroyed much of the forest on the ridges and slopes of Mount Nimba in Liberia. The run-off from mining operations has caused pollution and siltation in the Yah river, the only important river in Liberian Nimba. In addition, the mining operations have led to a much increased human population in the area and consequent burning, farming and hunting activities. Although operations ceased during the civil war, the lasting effects of mining have had a disastrous effect on the conservation potential of the area. A large number of refugees displaced by the war settled in camps in the Nimba area. Surveys are needed to establish the current situation and to refine, if appropriate, site boundaries.

Further reading

Colston and Curry-Lindahl (1986), Gatter (1997), Lamotte (1998).

Cape Mount

Admin region Grand Cape Mount
Coordinates 06°45'N 11°21'W
Area 4,560 ha Altitude 0–322 m

LR005

A3 (A05), A4i
Unprotected

Site description

The proposed Nature Reserve of Cape Mount lies on the coast of Liberia, to the north-east of Monrovia at the end of a spit of land which separates the lake from the Atlantic. The town of Robertspport lies at the tip of this spit. The site includes part of the lagoon, mangroves, rocky and sandy shorelines together with a small area of lowland forest. The site lies within Liberia's maximum rainfall zone and receives up to 6,000 mm annually.

Birds

See Box and Table 3 for key species. In addition, the Near Threatened and restricted-range *Lamprotornis cupreocauda* has been recorded (see Table 2). The site holds a number of species restricted to the Guinea–Congo Forests biome that are typical of coastal habitats, un- or under-represented elsewhere.

Key species

A3 (A05) Guinea–Congo Forests biome: 51 of the 184 species of this biome that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 3.

A4i	Breeding (pairs)	Non-breeding
<i>Sterna maxima</i>	—	c.500 (1986)
<i>Chlidonias niger</i>	—	3,900 (1986)

Other threatened/endemic wildlife

None known to BirdLife International.

Conservation issues

The area was proposed as a Nature Reserve in 1983. The forest areas are likely to be threatened by timber extraction for construction and by the collection of fuelwood. There are numbers of refugees in the area.

Further reading

Gatter (1988, 1997).

Zwedru

Admin region Grand Gedeh
Coordinates 06°17'N 08°16'W
Area c.15,000 ha Altitude c.200 m

LR006

A1, A2 (084), A3 (A05)
Unprotected

Site description

The site is located in central-eastern Liberia, north-west of the town of Zwedru. The Cavalla river, the international frontier with Côte d'Ivoire, forms the northern boundary to the site, which lies immediately west of the Cavally and Goin-Débé Forest Reserves IBA (CI008) in Côte d'Ivoire. The site includes the fragmented forest blocks that remain north of the road between the towns of Zwedru and Zlehtown and the Cavalla river, as far west as the point where its course turns northwards. The forests of this area, transitional between evergreen and semi-deciduous, are being destroyed by slash and burn agriculture. Further work is required to define site boundaries.

Birds

See Box and Tables 2 and 3 for key species. This site is the only one from which *Phyllastrephus leucolepis* is known.

Key species

A1	<i>Agelastes meleagrides</i>	<i>Criniger olivaceus</i>
	<i>Scotopelia ussheri</i>	<i>Illadopsis rufescens</i>
	<i>Ceratogymna cylindricus</i>	<i>Picathartes gymnocephalus</i>
	<i>Ceratogymna elata</i>	<i>Bathmocercus cerviniventris</i>
	<i>Phyllastrephus leucolepis</i>	<i>Malimbus ballmanni</i>
	<i>Bleda eximia</i>	<i>Lamprotornis cupreocauda</i>
A2 (084)	Upper Guinea forests EBA: 12 of the 15 species of this EBA that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 2.	
A3 (A05)	Guinea–Congo Forests biome: 160 of the 184 species of this biome that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 3.	

Other threatened/endemic wildlife

Mammals recorded from the nearby Grebo National Forest, some or all of which may be expected to occur or to have occurred, include *Loxodonta africana* (EN), *Pan troglodytes* (EN), *Colobus polykomos* (LR/nt), *Piliocolobus badius* (LR/nt), *Cercopithecus diana* (VU), *Hexaprotodon liberiensis* (VU), *Syncerus caffer* (LR/cd), *Cephalophus zebra* (VU), *C. jentinki* (VU), *C. sylvicultor* (LR/nt), *Tragelaphus euryceros* (LR/nt) and *Liberiictis kuhni* (EN).

Conservation issues

The forests are becoming increasingly fragmented and degraded as a result of clearance for agriculture. Other threats include commercial logging and hunting.

Further reading

Gatter (1985, 1997), Gatter and Gardner (1993).

Cestos–Senkwen

Admin region Grand Bassa, Sinoe
Coordinates 05°31'N 09°21'W

A1, A2 (084), A3 (A05)

Area 146,800 ha Altitude 0–400 m National Forest, Unprotected

LR007

Site description

This site lies on the coast between the towns of Buchanan to the north-west and Greenville to the south-east and stretches inland northwards from the coast for some 70 km. It includes part of the lower reaches of the scenic Cestos and Senkwen rivers, as well as the estuary of the latter, with 1,200 ha of mangroves. The proposed park thus embraces evergreen lowland rainforest, mangroves and undisturbed coastal vegetation including some of the last examples of littoral forest in West Africa. The area is low-lying with scattered hills.

Birds

See Box and Tables 2 and 3 for key species. In addition to those listed below, it is probable that *Scotopelia ussheri* will be found to occur in the mangroves and riparian forest.

Key species

A1	<i>Agelastes meleagrides</i>	<i>Criniger olivaceus</i>
	<i>Ceratogymna cylindricus</i>	<i>Malaconotus lagdeni</i>
	<i>Ceratogymna elata</i>	<i>Illadopsis rufescens</i>
	<i>Campephaga lobata</i>	<i>Malimbus ballmanni</i>
	<i>Bleda eximia</i>	<i>Lamprotornis cupreocauda</i>
A2 (084)	Upper Guinea forests EBA: Eight of the 15 species of this EBA that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 2.	
A3 (A05)	Guinea–Congo Forests biome: 90 of the 184 species of this biome that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 3.	

Other threatened/endemic wildlife

Mammals include *Hexaprotodon liberiensis* (VU), *Pan troglodytes* (EN), *Cercocebus torquatus* (LR/nt), *Piliocolobus badius* (LR/nt), *Colobus polykomos* (LR/nt), *Cercopithecus diana* (VU), *Cephalophus jentinki* (VU), *C. zebra* (VU), *C. sylvicultor* (LR/nt), *C. maxwelli* (LR/nt), *C. dorsalis* (LR/nt), *Tragelaphus euryceros* (LR/nt), *Syncerus caffer* (LR/cd) and *Hyemoschus aquaticus* (DD). The local population of elephant *Loxodonta africana* (EN) has apparently been extirpated.

Conservation issues

The area, part of which overlaps with the Krahn Bassa National Forest, was proposed as a National Park in 1983. During the civil war a new road directly linking Greenville with Buchanan was built, which cuts through the northern part of the proposed park. This road was constructed to allow logging of this hitherto remote area. As a result, deforestation is taking place rapidly and, following the ending of hostilities, there has been a large influx of people and associated development of settlements and agriculture. There are now organized, commercial hunting operations in the area, with the bush-meat being sent to Buchanan and Monrovia. In 1999, the situation was considerably exacerbated when an Indonesian logging company, with a concession of 1.4 million hectares, invested heavily in the area. As a result, the roads have been upgraded into full highways and intensive logging is taking place. These operations represent a threat of considerably greater magnitude than anything that has previously

affected the area. They also potentially have implications for Zwedru (site LR006) and Sapo (LR008).

■ Further reading

Gatter (1997), IUCN (1987), Robinson and Suter (1999).

Sapo	LR008
Admin region Sinoe	
Coordinates 05°28'N 08°30'W	A1, A2 (084), A3 (A05)
Area 130,747 ha Altitude c.100–400 m	National Park

■ Site description

Sapo National Park is located in south-east Liberia, some 70 km inland from the coastal town of Greenville. The park is an area of moist lowland rainforest, composed of 63% primary and mature secondary forest, 13% swamp-forest, 13% seasonally inundated forest and 11% young secondary forest. The terrain is undulating and low-lying, although Mount Putu in the north-east reaches 310 m and the steep ridges of the north reach 400 m. The park is drained in the west by the Sinoe river (or Pahneh Creek), which forms part of the western boundary, and the Dugbe river in the south-east.

■ Birds

See Box and Tables 2 and 3 for key species.

Key species	
A1	<i>Agelastes meleagrides</i> <i>Ceratogymna cylindricus</i> <i>Ceratogymna elata</i> <i>Bleda eximia</i> <i>Criniger olivaceus</i>
A2 (084)	<i>Malaconotus lagdeni</i> <i>Illadopsis rufescens</i> <i>Picathartes gymnocephalus</i> <i>Malimbus ballmanni</i>
A3 (A05)	Upper Guinea forests EBA: Eight of the 15 species of this EBA that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 2.
	Guinea–Congo Forests biome: 85 of the 184 species of this biome that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 3.

■ Other threatened/endemic wildlife

Mammals include *Pan troglodytes* (EN), *Procolobus verus* (LR/nt), *Procolobus badius* (LR/nt), *Colobus polykomos* (LR/nt), *Cercopithecus diana* (VU), *Liberiictis kuhni* (EN), *Loxodonta africana* (EN), *Hexaprotodon liberiensis* (VU), *Cephalophus jentinki* (VU), *Tragelaphus euryceros* (LR/nt) and *Syncerus caffer* (LR/cd).

■ Conservation issues

The area was declared a National Park in 1983. Although there are no permanent human settlements in the park, hunting pressure is thought to be high. There were at least two major encroachments into the park before the civil war, one by a logging company in 1985 and another by farmers in 1986. Fish poisoning using timber-treatment chemicals has been reported. The area had escaped commercial logging before the war because the timber was considered largely to be low

grade. Since the end of the war illegal logging has, however, been occurring, as has alluvial gold mining. However, this is no guarantee that there will not be pressure for logging concessions in the future.

■ Further reading

Carter (1987), Gatter (1997), Gatter and Gardner (1993), IUCN (1986), Robinson (1983), Stephens (1988), Verschuren (1983).

Cavalla river	LR009
Admin region Grand Gedeh	
Coordinates 05°18'N 07°28'W	A1, A2 (084), A3 (A05)
Area 12,150 ha Altitude c.200 m	National Forest, Unprotected

■ Site description

The site is an area of evergreen lowland rainforest enclosed on three sides by a large, easterly projecting meander of the Cavalla river, on the international frontier with Côte d'Ivoire, in the extreme east of the country. It lies about 15 km due west of the southern end of Tai National Park (CI013) in Côte d'Ivoire.

■ Birds

See Box and Tables 2 and 3 for key species.

Key species		
A1	<i>Agelastes meleagrides</i> <i>Ceratogymna cylindricus</i> <i>Ceratogymna elata</i> <i>Campephaga lobata</i> <i>Bleda eximia</i>	<i>Criniger olivaceus</i> <i>Illadopsis rufescens</i> <i>Bathmocercus cerviniventris</i> <i>Lamprotornis cupreocauda</i>
A2 (084)	Upper Guinea forests EBA: Nine of the 15 species of this EBA that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 2.	
A3 (A05)	Guinea–Congo Forests biome: 133 of the 184 species of this biome that occur in Liberia have been recorded at, or in the vicinity of, this site; see Table 3.	

■ Other threatened/endemic wildlife

Mammals recorded include *Loxodonta africana* (EN), *Hexaprotodon liberiensis* (VU), *Pan troglodytes* (EN), *Colobus polykomos* (LR/nt), *Procolobus badius* (LR/nt), *Cercopithecus diana* (VU), *C. jentinki* (VU), *C. zebra* (VU), *C. sylvicultor* (LR/nt), *C. dorsalis* (LR/nt), *Tragelaphus euryceros* (LR/nt) and *Syncerus caffer* (LR/cd).

■ Conservation issues

The area, part of the Grebo National Forest, was proposed as a Nature Reserve in 1983. Logging in the general area, with the timber exported via Harper and Côte d'Ivoire, is widespread; locally it is estimated that the forests of the area will be completely degraded by 2020. Hunting pressure is high with the bush-meat sent over the border into Côte d'Ivoire.

■ Further reading

Gatter (1997).

BIBLIOGRAPHY

- ANON. (2000) Restarting nature conservation in Liberia. *Fauna and Flora News* 12: 1–2.
- CARTER, M. F. (1987) *Initial avifaunal survey of Sapo National Park, Liberia*. WWF/FDA, Monrovia, Liberia.
- COLSTON, P. R. AND CURRY-LINDAHL, K. (1986) *The birds of Mount Nimba, Liberia*. London: British Museum (Natural History).
- GATTER, W. (1985) Ein neuer Bülbül aus Westafrika (Aves, Pycnonotidae). *Journal für Ornithologie* 126: 155–161.
- GATTER, W. (1988) *Coastal wetlands of Liberia: their importance for wintering waterbirds*. Cambridge, UK: ICBP (Study Report No. 26).
- GATTER, W. (1997) *Birds of Liberia*. Sussex, UK: Pica Press.
- GATTER, W. AND GARDNER, R. (1993) The biology of the Gola Malimbe *Malimbus ballmanni*, Wolters 1974. *Bird Conservation International* 3: 87–103.
- IUCN (1986) *Integrated management and development plan for Sapo National Park and surrounding areas in Liberia*. WWF/IUCN Project 3216. Gland, Switzerland.
- IUCN (1987) *Directory of Afrotropical protected areas*. IUCN, Gland, Switzerland and Cambridge, UK.
- KOFRON, C. P. AND CHAPMAN, A. (1995) Deforestation and bird species composition in Liberia, West Africa. *Tropical Zoology* 8: 239–256.
- LAMOTTE, M., ED. (1998) *Le mont Nimba. Réserve de biosphère et site du patrimoine mondial (Guinée et Côte d'Ivoire)*. Paris: UNESCO.
- ROBINSON, P. T. (1983) The proposed Sapo National Park in Liberia: a field survey of prospects and problems. *National Geographic Society Research Reports* 21: 425–435.
- ROBINSON, P. T. AND SUTER, J. (1999) Survey and preparation of a preliminary conservation plan for the Cestos–Senkwehn riversheds of south-eastern Liberia. Report on the World Bank—World Wildlife Fund Global Forest Alliance—WildInvest Project: January–March 1999, May 1999. (Unpubl. report.)
- SCIENCE AND TECHNOLOGY DIVISION, LIBRARY OF CONGRESS (1980) *Environmental profile of Liberia*. Dept. of State, Washington, D.C.
- STEPHENS, C. (1988) *Environment and nutrition survey, Sapo National Park*. WWF, Monrovia, Liberia.
- VERSCHUREN, J. (1983) *Conservation of tropical rainforest in Liberia: recommendations for wildlife conservation and national parks*. Gland, Switzerland: WWF/IUCN.