



**TIPA ASSESSMENT:
NIMBA MOUNTAINS, LOLA PREFECTURE**

ABSTRACT

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TIPAs Report: Nimba Mountains, Lola Prefecture.

IPA criteria under which the site qualifies: A(i,ii,iv), B(i), C(iii)

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IPA ASSESSMENT RATIONALE

The Nimba Mountain range is an area of exceptional biodiversity globally. It has over 2,400 plant species making it the richest documented botanical site in West Africa. It has at least 31 threatened species and several species endemic either to the mountain range or Guinea, and species with restricted disjunct distributions e.g. *Justicia jamisonii*. Although it is recognised as a Biosphere Reserve and world heritage site, the range is threatened in many ways will likely reduce the populations of some species and habitat.

SITE OVERVIEW

Site Name: Nimba Mountains	
Country: Guinea	Administrative region: Lola Prefecture
Central co-ordinates: 7°37'20"N, 8°24'36"W	Area (km ²): 149.2
Altitude minimum: 450 m	Altitude maximum: 1752 m

SITE DESCRIPTION

The Nimba Mountains are situated in the SE part of Guinea in Lola Prefecture. The range extends into Liberia and Ivory Coast. The highest peak in Guinea reaches 1752m. The area in Guinean covers 149.2 km². It was protected in 1944 and the majority (134.1 km²) is recognised as a world heritage site and has been a core area of the Nimba Mountains Biosphere Reserve since 1980. Due to their height, age and isolation, the Nimba Mountains are exceptionally rich in flora and fauna, with a large number of rare and range-restricted species, including a few species endemic to the Nimba Mountains. The slopes of the mountains are forested and there is sub-montane grassland above this on mainly itabirites that have undergone various degrees of leaching of its alumina-silicate components. The high-altitude grasslands with high species diversity and submontane forest are recognised threatened habitats of Guinea.

The area is locally managed by the Centre for the Management of the Environment of the Nimba and Simandou Mountains (CEGENS).



Extract from Google Earth showing the proposed TIPA site

BOTANICAL SIGNIFICANCE

Due to the height and isolation of the Nimba Mountains they are home to many rare and range-restricted species, including a few endemic to the mountain and others to Guinea. Recent studies have resulted in over 2400 floral species being recorded in the Guinean portion, making it the richest site in Guinea for plant species. At least 31 globally threatened species are known, though this is likely to increase as more IUCN assessments are made. The submontane forests have sub-species endemic to the Nimba Mountains such as *Begonia quadrialata subsp. nimbaensis* and *Brachystephanus jaundensis* ssp. *nimbae*, and submontane grassland has threatened species found both at Nimba and in the Simandou mountains e.g. *Kotchya lutea*, *Rhytachne glabra*, *Bulbostylis guineensis*, *Nemum bulbostyloides*. There are also species found here that have disjunct distributions across Africa e.g. *Justicia jamisonii* and *Marsdenia exellii*. Some species named 'nimba', while first collection at Nimba, have subsequently been found on other parts of the Guinean highlands e.g. *Ixora nimbana*, *Dolichos nimbaensis* and *Monanthataxis nimbana*.

GENERAL HABITAT AND GEOLOGY DESCRIPTION

The Nimba Mountains represent a rift area of the early Proterozoic era, similar in age and structure to the Simandou range intrusion. The range comprises itabirite, quartzite and other schists emplaced onto a terrain of tonalitic granite-gneiss, migmatite and sedimentary gneisses. There is a significant iron ore deposit which is in the forms of haematites and goethites enriched from long-term leaching and weathering processes, including thrusting, faulting, folding and thermal processes.

CONSERVATION ISSUES

The mountains are threatened by (1) intense poaching, suffering from the 'empty-forest' syndrome, (2) agricultural encroachment, which has disturbed far more habitat, generally at low altitudes in forest than any other form of disturbance, (3) regular, anthropogenic and intense bushfires at the

height of the dry season when they do not occur naturally, (4) invasive species and in particular *Chromolaena odorata* which has invaded mid-altitude savannahs and forest-edges, (5) grazing of cattle at low elevations at the edge of forest, (6) isolation from neighbouring intact ecosystems due to agriculture, forestry and roads in the surrounding lowlands, and (7) mineral exploration in the Mining Enclave.

An area of 15.16 km² was excised from the colonial Strict Nature Reserve of 1944 for mineral exploration, covering 10% of the Guinean Nimba Mountains and 4.8% of the entire Nimba range. An iron ore project is currently in late- phase exploration in a mining concession of 6.25 km² within this enclave. Mineral exploration has resulted in construction of access roads and drill pads, affecting up to 0.5 km². If a mine were developed, it would result in disturbance of a few km² of the enclave. For this reason, a detailed environmental impact assessment is underway to avoid and minimise negative impacts, in particular to the adjacent world heritage site, and to seek how best to close a future mine and rehabilitate the site for its long-term, subsequent conservation.

The TIPA area will acknowledge the mining zone as an area of development, which should focus on minimizing the amount of disturbance across the area since the same habitat types are found within the mining enclave and the world heritage site.

Concerns have been raised by the World Heritage Committee about a road upgrade running between Lola (Guinea) and Danané (Ivory Coast) in the Biosphere Reserve's Buffer Zone, too. The World Heritage Committee has retained Nimba on the list of World Heritage Sites in Danger (2018).

Despite controls in place to manage these threats, continuing damage to the world heritage site is possible and will inevitably reduce the global populations of some species and also the extent of threatened habitats.

PROTECTED AREA STATUS AND MANAGEMENT

Strict Nature Reserve (1944, updated in 2010), Managed Nature Reserve (2010), Biosphere Reserve (1980, updated in 1993), World Heritage Site (1980, updated in 1993). The TIPA surrounds the Strict Nature Reserve and the Managed Natural Reserve, part of the Biosphere Reserve and the World Heritage Site.

THREATS

Agriculture	Villagers in the foothills of the Nimba area have encroached with their fields, burning the mountains and isolating it from surrounding natural habitats.
Wildfires	Anthropogenic bushfires regularly burn the mountain most years at a time when they do not occur naturally
Invasive species	Invasive exotic species like <i>Chromolaena odorata</i> are rapidly colonising certain ecosystems, in particular savannahs and forest-edge between 450-1200m altitudes.
Mining	An iron ore concession in the northern portion the mountain range, outside of the current Strict Nature Reserve, may be developed.
Habitat isolation	Nimba Mountains are increasingly isolated from neighbouring natural habitat
Hunting	Illegal hunting, leading to wildfires (see above) and reduced regeneration of certain species and habitats.
Grazing	Cattle are grazed in the lowland savannah, disturbing lowland savannah types, forest edges, and burning forest to create more savannah

THREAT LEVEL: **High**

Criterion A: Threatened Species

Criterion A taxon present	IPA subcriterion	IUCN redlist assessment	Site contains...			For KBA compatibility: Site contains...		Species is of socio-economic importance	*Abundance at site
			≥ 1% of global population	≥ 5% of national population	Is 1 of 5 best sites nationally	≥ 10% of global population	Entire global population (single-site endemic)		
[Genus, species, Author, [infra rank, infra name, infra Author]]	[A(x)]	[category and criteria]	○	○	○	○	○		
<i>Begonia quadrialata</i> subsp. <i>nimbaensis</i> Sosef	A(i)	EN		⊙	⊙	⊙	⊙	No	Common
<i>Tarenna hutchinsonii</i> Bremek.	A(i)	CR		⊙					Scarce
<i>Justicia jamisonii</i> Jongkind & Vollesen	A(i)	EN		⊙					Infrequent
<i>Marsdenia exellii</i> C. Norman	A(i)	EN			⊙				Scarce
<i>Bulbostylis guineensis</i> Cherm. ex Bodard	A(i)	EN	⊙	⊙					Unknown
<i>Hypolytrum cacuminum</i> Nelmes	A(i)	EN							Common
<i>Okoubaka aubrevillei</i> Pellegr. & Normand	A(i)	EN							Frequent
<i>Allophylus samoritourei</i> Cheek	A(i)	EN			⊙				Infrequent
<i>Brachystephanus jaundensis</i> subsp. <i>nimbae</i> Lindau	A(i)	VU		⊙					Infrequent
<i>Terminalia ivorensis</i> A. Chev.	A(i)	VU							Frequent
<i>Nemum bulbostyloides</i> (Hooper) J. Raynal	A(i)	VU		⊙					Common
<i>Albizia ferruginea</i> (Guill. & Perr.) Benth.	A(i)	VU							Frequent
<i>Kotschya lutea</i> (Portères) Hepper	A(i)	VU		⊙					Common
<i>Gladiolus praecostatus</i> Marais	A(i)	VU		⊙					Common

<i>Eriosema spicatum subsp. collinum</i> Hook. f.	A(i)	VU							Unknown
<i>Genlisea barthlottii</i> Porembski, Eb. Fisch. & Gemmel	A(i)	VU		⊙					Common
<i>Dorstenia astyanactis</i> Aké Assi	A(i)	VU			⊙				Scarce
<i>Panicum glaucocladum</i> C.E. Hubb.	A(i)	VU		⊙					Common
<i>Rhynchachne glabra</i> (Gledhill) Clayton	A(i)	VU		⊙					Common
<i>Homalium smythei</i> Hutch. & Dalziel	A(i)	VU							Frequent
<i>Pavetta platycalyx</i> Bremek.	A(i)	VU							Frequent
<i>Copaifera salikounda</i> Heckel	A(i)	VU							Frequent
<i>Cryptosepalum tetraphyllum</i> (Hook. f.) Benth.	A(i)	VU			⊙				Common
<i>Cola reticulata</i> A. Chev.	A(i)	VU							Frequent
<i>Entandrophragma angolense</i> (Welw. ex C. DC.) C. DC.	A(i)	VU							Frequent
<i>Entandrophragma candollei</i> Harms	A(i)	VU							Frequent
<i>Khaya grandifoliola</i> C. DC.	A(i)	VU							Frequent
<i>Milicia regia</i> (A. Chev.) C.C. Berg	A(i)	VU							Frequent
<i>Polystachya orophila</i> Stévant & E. Bidault	A(i)	VU			⊙				Common

Associated look-up table: Abundance (Abundant, Common, Frequent, Infrequent, Scarce, Unknown).

Criterion B: Botanical Richness

B(i) exceptional botanical richness within a defined habitat			B(ii): exceptional number of species of conservation importance - site recording table (from nationally agreed list)		B(iii): exceptional number of useful / culturally valuable species (from nationally agreed list)	
*Habitat code and name	Site is part of the top 10% of the national resource	Site is one of the 5 best sites nationally for that habitat	Site contains ≥ 3% of the species on the national list	Site is one of the 15 richest locations nationally	Site contains ≥ 3% of the species on the national list	Site is one of the 15 richest locations nationally
Submontane Grassland	⊙	⊙	○	○	○	○
Submontane Forest	⊙	⊙				

*Criterion B taxon present [select from taxon look-up table]	Sub-criterion under which species qualifies [populated automatically from taxon look up table]	For B(i) – indicator of habitat [habitat name and code populated automatically brought across from look-up table (b)]	*Abundance at site
[Genus, species, Author, [infra rank, infra name, infra Author]]	B(x) [could be more than one]		
<i>Justicia guineensis</i> (Heine) W. D. Hawth. & Jongkind	B(i)	Submontane Forest	Frequent
<i>Brachystephanus jaundensis</i> subsp. <i>nimbae</i> Lindau	B(i)	Submontane Forest	Infrequent
<i>Bulbophyllum scariosum</i> Summerh.	B(i)	Submontane forest	Scarce
<i>Cassipourea adamii</i> Jacq.-Fél.	B(i)	Submontane forest	Infrequent
<i>Croton aubrevillei</i> J.Léonard	B(i)	Submontane forest	Scarce
<i>Helichrysum globosum</i> Sch. Bip. ex A. Rich.	B(i)	Submontane Forest	Unknown
<i>Impatiens nzoana</i> A.Chev. !!!	B(i)	Submontane Forest	Scarce
<i>Monanthes nimbaensis</i> (Schnell) Verdc.	B(i)	Submontane Forest	Unknown
<i>Brachycorythis paucifolia</i> Summerh.	B(i)	Submontane grassland	Infrequent
<i>Bulbostylis guineensis</i> Cherm. ex Bodard	B(i)	Submontane grassland	Infrequent
<i>Coleus lateriticola</i> (A. Chev.) Phillipson, O. Hooper & A.J. Paton	B(i)	Submontane grassland	Infrequent

<i>Dolichos nimbaensis</i> Schnell	B(i)	Submontane grassland	Frequent
<i>Dolichos tonkouiensis</i> Portères	B(i)	Submontane grassland	Frequent
<i>Droogmansia scaettaiana</i> A. Chev. & Sillans	B(i)	Submontane grassland	Common
<i>Eriosema laurentii</i> De Wild.	B(i)	Submontane grassland	Frequent
<i>Eriosema parviflorum</i> subsp. <i>collinum</i> Hepper	B(i)	Submontane grassland	Unknown
<i>Eriosema spicatum</i> subsp. <i>collinum</i> Hook. f.	B(i)	Submontane grassland	Unknown
<i>Genlisea barthlottii</i> Porembski, Eb. Fisch. & Gemmel	B(i)	Submontane grassland	Frequent
<i>Gladiolus praecostatus</i> Marais	B(i)	Submontane grassland	Frequent
<i>Gynura micheliana</i> J., G.Adam	B(i)	Submontane grassland	Scarce
<i>Kotschya lutea</i> (Portères) Hepper	B(i)	Submontane grassland	Frequent
<i>Nemum bulbostyloides</i> (Hooper) J. Raynal	B(i)	Submontane grassland	Abundant
<i>Panicum glaucocladum</i> C.E. Hubb.	B(i)	Submontane grassland	Frequent
<i>Polygala cristata</i> P.Taylor	B(i)	Submontane grassland	Infrequent
<i>Rhytachne glabra</i> (Gledhill) Clayton	B(i)	Submontane grassland	Infrequent
<i>Rhytachne megastachya</i> Jacq.-Fél.	B(i)	Submontane grassland	Unknown
<i>Scleria robinsoniana</i> J. Raynal	B(i)	Submontane grassland	Infrequent
<i>Vernonia nimbaensis</i> C.D. Adams	B(i)	Submontane grassland	Frequent
<i>Virectaria multiflora</i> (Sm.) Bremek.	B(i)	Submontane grassland	Frequent
<i>Osbeckia porteresii</i> Jacq.-Fél.	B(i)	Submontane grassland (on rocks)	Unknown
<i>Phyllanthus jaegeri</i> Jean F.Brunel & J.P.Roux	B(i)	Submontane grassland (on rocks)	Unknown
<i>Polystachya dalzielii</i> Summerh.	B(i)	Submontane grassland (on rocks)	Scarce
<i>Polystachya orophila</i> Stévert & E. Bidault	B(i)	Submontane grassland (on rocks)	Infrequent

Criterion C: Threatened Habitat

*Habitat type	IPA subcriterion (automatically populated from habitat look-up table)	IUCN redlist assessment (string automatically populated from look up table)	Site contains...		For KBA compatibility: Site contains...			Estimated area at site (if known)
			≥ 5% of national resource (for C(i) and C(ii))	≥ 10% of national resource (for C(iii))	For CR and EN habitats: ≥ 5% of global resource	For VU habitats: ≥ 10% of global resource	For range restricted habitat: ≥ 20% of global resource	
High-altitude grasslands with high species diversity			○	⊙	○	○	○	
Submontane forest				⊙				
Lowland evergreen forest				⊙				

Bibliography

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Site in pictures



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