Ngovayang Massif

CMNTIPA001

Country: **Cameroon**
Administrative region: **South (Region)**
Central co-ordinates: **3.25000 N, 10.50000 E**
Area: **1035km²**

Qualifying IPA criteria

A(i)

IPA assessment rationale

Over 100 of the species listed here are published as globally threatened on the IUCN Red List, with 20 of them Critically Endangered. Therefore the site easily qualifies under criterion A(i). Many of these taxa also have restricted ranges (ten of them are narrowly endemic to the site) and would therefore enable the site to meet criteria A(iii) or A(iv).
Ngovayang was already found to qualify as a potential IPA under several criteria by Droissart et al. (2019). They noted the exceptional plant diversity (> 20% of the total Flora of Cameroon) occurring in two broadly defined vegetation types (lowland forest and submontane forest), which potentially qualified it under criterion B(i). The high concentration of range restricted species and national endemic taxa, documented particularly for the Rubiaceae and Orchidaceae, might also meet criterion B(ii). The site may additionally qualify as one of the best national sites for submontane forest above ~750 m elevation (Droissart et al., 2019).

Site description

The Ngovayang Massif Area (NMA) in South Region, Cameroon is a northeast-southwest angled ridge of lowland and sub-montane rainforest c. 50-100 km from the Atlantic coast (Droissart et al., 2019). It lies south of the Sanaga river, near the transition between the Lower Guinea and Congolian forest zones, in the Atlantic Coastal Equatorial Forests ecoregion (Olson et al., 2001). Areas of primary forest likely occur in inaccessible parts of the range and areas of sub-montane forest are found on the summit area of the main ridge. The lowlands and lower slopes have been degraded by logging and slash and burn agriculture but are often succeeded by regrowth and secondary forest. Several communities are located along the Bipindi-Lolodorf road along the southern edge of the massif and along other perimeter roads. The Massif itself has less human presence although Bagyeli forest hunter-gatherers make temporary camps throughout the forest (Gonmadje et al., 2011).

Botanical significance

The Ngovayang forests have some of the highest species richness and endemism of all Central African forests (Gonmadje et al., 2011;

Droissart et al., 2019). Topography, high precipitation and permanence of forest cover during periods of drier climate may help explain this richness (Gonmadje et al., 2011). A particular richness in Fabaceae-Detarioideae, likely indicates that the area has remained under forest cover during the past ice ages. The NMA has been shown to be important for its exceptional plant diversity (> 20% of the total Flora of Cameroon), its concentration of many threatened and/or restricted range species (10 taxa are strict endemics of the massif), and for its threatened habitats, for example the sub-montane vegetation above ~750 m elevation (Droissart et al., 2019). The Ngovayang Massif represents the third richest documented area for Cameroon (Droissart et al., 2019) after the Mount Cameroon National Park (2435 plant species, Cable & Cheek, 1998) and the Kupe, Mwanenguba and Bakossi Mountains (2412 plant species, Cheek et al., 2004). Taxa strictly endemic to the Ngovayang Massif include: Phyllanthus aspersus, Bertiera heterophylla, Globulostylis leniochlamys, Kupeantha spathulata, Psychotria conica subsp. ngovayangensis, P. retrorsipilis, P. villicarpa subsp. sessilis, Sabicea trigemina (all 7 species are Rubiaceae; Droissart et al., 2019). Eremospatha barendii (Palmae) is also endemic to an area just south of the site. At least 6 other species are new to science; most of these may also be endemic to Ngovayang when formally described (Droissart et al., 2019; Burgt unpubl. data). Over 120 species listed here are published on the IUCN Red List as globally threatened. Recent botanising has particularly focussed on Rubiaceae, Orchidaceae and Begoniaceae. However, many species listed here are recorded only from collections by Zenker over 100 years ago in the region of Bipindi (Droissart et al., 2019). These can not be precisely located and it is possible that some will have been collected from outside the Ngovayang massif and may not occur there. Furthermore, several species collected in the lowland around Bipindi may have become extinct as this area has developed.

Habitat and geology

The Massif lies towards the northern end of the Congo craton and belongs to the Nyong unit, part of the Ntem complex. The Nyong unit consists of Archean and Paleoproterozoic meta-sedimentary, meta-volcanic and intrusive rocks, with gneiss, migmatite, quartzite and schists common, together with greenstone belts, iron formations and some ultramafics (Gonmadje et al., 2011; Paterne et al., 2019). These formations have been strongly influenced by the eburnean orogeny 2050 Ma (Paterne et al., 2019). Pedologically, xanthic ferralsols are dominant (Gonmadje et al., 2011, Droissart et al., 2019). Average annual rainfall is about 2,000 mm. There are four seasons with the main dry season between December and February and a short dry period from July to August. Mean annual temperature is 25°C and average minima and maxima are 23.4°C and 32.5°C respectively (Gonmadje et al., 2011; Paterne et al., 2019). However, the mountainous topology produces a range of localised microclimates. Together with geological variation this creates the potential for numerous niches, resulting in high diversity and endemicity (Gonmadje et al., 2011). The remaining intact habitat is evergreen moist lowland forest dominated by Caesalpiniaceae (now Detarioideae) and submontane forest, Letouzey's (1985) types 228 and 117. The lower slopes are more degraded forest. Geologically and phytogeographically the site appears to be at the meeting point of two zones. However, phytologically, Lower Guinea taxa appear to dominate over Congolian elements (Gonmadje et al., 2011).

Conservation issues

The rapid expansion of human activities in South Cameroon threatens the exceptional biodiversity of the Ngovayang Massif (NMA). The site does not at present have have any legal conservation status (Droissart et al. 2019). Most of the area is designated as production forest, with the Bipindi-Lolodorf Council Forest (478 km2) covering the central ridge and FMU 00-002 (115 km2) encompassing the northwestern part (MINFOF & WRI, 2021). Several community forests border these areas.

The lowland forests have been extensively logged in many parts of the massif, particularly in the north, although there are indications that companies have been moving to more sustainable management of the forests (Gonmadje et al., 2011). As elsewhere in Africa, the logging roads provide access to hunters and farmers, after the logging companies have left, thus resulting in further degradation of the forest.

Hunting is widespread in the region (Gonmadje et al., 2011). Their catch may be sold in villages but also in the main cities of Cameroon. Important forest seed dispersers, such as elephants, have become rare in the region, which may reduce the population density of plant species depending on these animals for their seed dispersal.

There exists a threat of deforestation by farmers and commercial agricultural companies (Gonmadje et al., 2011). Local villagers in the area clear small patches of forest for slash-and-burn farming; individuals living in the nearby cities buy larger areas of forest and clear these for the cultivation of cash crops to be sold within Cameroon; commercial agricultural companies may buy large areas of forest for transformation into plantations of crops such as plantains, oil palm and rubber, to be sold nationally and internationally.

Mining is arguably the highest priority threat to the site. Prospecting has revealed one of the largest magnetite iron ore deposits in Central Africa. Investigations have also shown that the predominantly magnetite-gneiss ore is of sufficient grade and mass for potential economic exploitation (Droissart et al., 2019). Unfortunately, iron mining is considered one the worst extraction processes for surface impact, and it would appear that the highest concentrations of ore are located in the higher altitude areas where the forest is more intact (Droissart et al., 2019).

Mining companies have also been attracted to gold deposits which appear to be more concentrated in the lowland, southeastern area (Droissart et al., 2019). Uranium has also been prospected and sand is quarried from the Lokundje river (Paterne et al., 2019). The NMA is subject to three exploration permits (EP) covering 2972 km2: EP 144 covers the main part of the NMA, EP 195 is located in the north and northeastern part of NMA, and EP 221 in the southeast (Droissart et

al., 2019). “Jindal Steel and Power” took over control of operations from the Legend Mining company in 2014 for of $17.5M (Droissart et al. 2019).
A management plan involving in situ and ex situ conservation actions is urgently needed to reduce the potential threats of future mining activities (Droissart et al. 2019).

Site assessor(s)

Xander van der Burgt, Royal Botanic Gardens, Kew

Bruce Murphy, Royal Botanic Gardens, Kew

IPA criterion A species

SPECIES	QUALIFYING SUB-CRITERION	≥ 1% OF GLOBAL POPULATION	≥ 5% OF NATIONAL POPULATION	1 OF 5 BEST SITES NATIONALLY	ENTIRE GLOBAL POPULATION	SOCIO-ECONOMICALLY IMPORTANT	ABUNDANCE AT SITE
Pseuderanthemum dispermum Milne-Redh.	A(i)	✓	✓	✓	–	–	
Staurogyne bicolor (Mildbr.) Champl.	A(i)	✓	–	–	–	–	
Whitfieldia preussii (Lindau) C.B.Clarke	A(i)	✓	✓	✓	–	–	
Ancistrocladus letestui Pellegr.	A(i)	–	–	✓	–	–	
Boutiquea platypetala (Engl. & Diels) Le Thomas	A(i)	✓	–	✓	–	–	
Isolona pleurocarpa Diels	A(i)	✓	✓	✓	–	–	
Isolona zenkeri Engl.	A(i)	–	–	–	–	–	
Baissea ochrantha K.Schum. ex Stapf	A(i), A(iii)	✓	✓	✓	–	–	
Landolphia flavidiflora (K.Schum.) J.G.M.Pers.	A(i)	✓	✓	✓	–	–	
Landolphia maxima (K.Schum. ex Hallier f.) Pichon	A(i)	✓	✓	✓	–	–	
Pleioceras zenkeri Stapf	A(i)	–	–	✓	–	–	
Eremospatha barendii Sunderl.	A(i), A(iii)	✓	✓	✓	✓	–	
Chlorophytum petrophilum K.Krause	A(i)	✓	✓	✓	–	–	
Impatiens hians Hook.f. var. bipindensis (Gilg) Grey-Wilson	A(i)	✓	✓	✓	–	–	
Hoplestigma pierreanum Gilg	A(i), A(iii)	✓	✓	✓	–	–	
Afrothismia winkleri (Engl.) Schltr.	A(i), A(iii)	✓	✓	✓	–	–	

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Campylostemon mitophorum Loes.	A(i)	✓	✓	✓	–	–	
Loeseneriella camerunica (Loes.) N.Hallé	A(i)	✓	✓	✓	–	–	
Salacia lucida Oliv.	A(i)	✓	✓	✓	–	–	
Dactyladenia cinerea (Engl. ex De Wild.) Prance & F.White	A(i)	✓	✓	✓	–	–	
Garcinia kola Heckel	A(i)	–	–	–	–	✓	
Combretum echirense Jongkind	A(i)	✓	✓	✓	–	–	
Aneilema silvaticum Brenan	A(i)	–	–	✓	–	–	
Calycobolus micranthus (Dammer) Heine	A(i)	✓	✓	✓	–	–	
Momordica enneaphylla Cogn.	A(i)	✓	✓	✓	–	–	
Dichapetalum reticulatum Engl.	A(i)	✓	✓	✓	–	–	
Diospyros alboflavescens (Gürke) F.White	A(i), A(iv)	–	–	–	–	–	
Diospyros crassiflora Hiern	A(i)	–	–	–	–	✓	
Crotonogyne zenkeri Pax	A(i)	✓	–	✓	–	–	
Grossera major Pax	A(i)	✓	✓	✓	–	–	
Hamilcoa zenkeri (Pax) Prain	A(i)	✓	✓	✓	–	–	
Necepsia afzelii Prain ssp. zenkeri Bouchat & J. Léonard	A(i)	–	–	–	–	–	
Afzelia africana Sm. ex Pers.	A(i)	✓	–	–	–	✓	
Afzelia bipindensis Harms	A(i)	–	–	–	–	✓	
Afzelia pachyloba Harms	A(i)	–	–	–	–	✓	

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Aphanocalyx hedinii (A.Chev.) Wieringa	A(i)	✓	✓	✓	–	–	
Eurypetalum unijugum Harms	A(i)	✓	✓	✓	–	–	
Gilbertiodendron pachyanthum (Harms) J.Léonard	A(i)	✓	✓	✓	–	–	
Gilbertiodendron zenkeri (Harms) J.Léonard	A(i), A(iii)	✓	✓	✓	✓	–	
Hymenostegia brachyura (Harms) J.Léonard	A(i)	✓	✓	✓	–	–	
Pyrenacantha grandifolia Engl.	A(i), A(iii)	✓	✓	✓	✓	–	
Vitex lokundjensis W.Piep.	A(i)	✓	✓	✓	–	–	
Rhaptopetalum sessilifolium Engl.	A(i), A(iii)	✓	✓	✓	–	–	
Strychnos gnetifolia Gilg ex Onochie & Hepper	A(i)	✓	✓	✓	–	–	
Strychnos zenkeri Gilg ex Baker	A(i)	–	✓	✓	–	–	
Agelanthus glaucoviridis (Engl.) Polhill & Wiens	A(i)	✓	✓	✓	–	–	
Helixanthera periclymenoides (Engl. & K.Krause) Balle	A(i), A(iii)	✓	✓	✓	✓	–	
Cola hypochrysea K.Schum.	A(i), A(iii)	✓	✓	✓	–	–	
Hypselodelphys zenkeriana (K.Schum.) Milne-Redh.	A(i)	✓	✓	✓	–	–	
Sarcophrynium villosum (Benth.) K.Schum.	A(i)	✓	–	✓	–	–	
Memecylon simulans (Jacq.-Fél.) R.D.Stone & Ghogue	A(i), A(iii)	✓	✓	✓	–	–	
Tristemma	A(i), A(iii)	✓	✓	✓	–	–	

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camerunense Jacq.-Fél.							
Entandrophragma candollei Harms	A(i)	–	–	–	–	✓	
Khaya ivorensis A.Chev.	A(i)	–	–	–	–	✓	
Trichilia zewaldae J.J.de Wilde	A(i), A(iii)	✓	✓	✓	–	–	
Turraeanthus africana (Welw. ex C.DC.) Pellegr.	A(i)	–	–	–	–	✓	
Turraeanthus mannii Baill.	A(i)	–	–	–	–	✓	
Albertisia capituliflora (Diels) Forman	A(i)	✓	✓	✓	–	–	
Campylospermum umbricola (Tiegh.) Farron	A(i)	–	–	–	–	–	
Lophira alata Banks ex Gaertn.f.	A(i)	–	–	–	–	✓	
Afropectinariella pungens (Schltr.) M.Simo & Stévart	A(i)	✓	✓	✓	–	–	
Angraecum angustum (Rolfe) Summerh.	A(i), A(iii)	✓	✓	✓	–	–	
Bulbophyllum alinae Szlach.	A(i), A(iii)	✓	✓	✓	–	–	
Bulbophyllum dolabriforme J.J.Verm.	A(i), A(iii)	✓	✓	✓	–	–	
Bulbophyllum porphyrostachys Summerh.	A(i)	–	✓	✓	–	–	
Bulbophyllum teretifolium Schltr.	A(i)	✓	–	✓	–	–	
Eggelingia gabonensis P.J.Cribb & Laan	A(i)	✓	✓	✓	–	–	
Gastrodia africana Kraenzl.	A(i), A(iii)	✓	✓	✓	–	–	
Bulbophyllum platybulbon (Schltr.) Govaerts & J.M.H.Shaw	A(i)	✓	✓	✓	–	–	

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Kylicanthe cornuata Descourv. & Stévart & Droissart	A(i)	✓	✓	✓	–	–	
Liparis hallei Szlach.	A(i)	✓	✓	✓	–	–	
Orestias micrantha Summerh.	A(i)	–	✓	✓	–	–	
Polystachya batkoi Szlach. & Olszewski	A(i)	✓	✓	✓	–	–	
Polystachya bipoda Stévart	A(i)	✓	✓	✓	–	–	
Polystachya lejolyana Stévart	A(i)	✓	✓	✓	–	–	
Rhipidoglossum montealenense Stévart & P.J.Cribb	A(i), A(iii)	✓	✓	✓	–	–	
Tridactyle eggelingii Summerh.	A(i)	–	✓	✓	–	–	
Tridactyle lagosensis (Rolfe) Schltr.	A(i)	✓	✓	✓	–	–	
Phyllanthus dusenii Hutch.	A(i)	✓	✓	✓	–	–	
Drypetes magnistipula (Pax) Hutch.	A(i)	–	✓	✓	–	–	
Drypetes preussii (Pax) Hutch.	A(i)	✓	✓	✓	–	–	
Drypetes staudtii (Pax) Hutch.	A(i)	✓	✓	✓	–	–	
Aulacocalyx mapiana Sonké & Bridson	A(i), A(iii)	✓	✓	✓	–	–	
Belonophora ongensis S.E.Dawson & Cheek	A(i), A(iii)	✓	✓	✓	–	–	
Belonophora talbotii (Wernham) Keay	A(i), A(iii)	✓	✓	✓	–	–	
Bertiera heterophylla Nguembou & Sonké	A(i), A(iii)	✓	✓	✓	–	–	

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Chassalia laikomensis Cheek	A(i), A(iii)	–	–	–	–	–	
Coffea mapiana Nguembou & A.P.Davis	A(i)	✓	✓	✓	–	–	
Colletoecema magna Sonké & Dessein	A(i)	✓	✓	✓	✓	–	
Gaertnera letouzeyi Malcomber	A(i)	✓	✓	✓	–	–	
Globulostylis leniochlamys (K.Schum.) Sonké	A(i), A(iii)	✓	✓	✓	✓	–	
Globulostylis rammelooana Sonké	A(i)	✓	✓	✓	–	–	
Ixora batesii Wernham	A(i), A(iii)	✓	✓	✓	–	–	
Ixora synactica De Block	A(i)	✓	✓	✓	–	–	
Kupeantha spathulata (A.P.Davis & Sonké) Cheek	A(i), A(iii)	✓	✓	✓	✓	–	
Leptactina latifolia K.Schum.	A(i)	✓	✓	✓	–	–	
Massularia stevartiana (K.Schum.) Hoyle	A(i)	✓	✓	✓	–	–	
Oxyanthus doucetii Sonké & O.Lachenaud	A(i)	✓	✓	✓	–	–	
Pavetta kribiensis S.D.Manning	A(i)	✓	✓	✓	–	–	
Psychotria conica O.Lachenaud ssp. ngovayangensis O.Lachenaud	A(i), A(iii)	✓	✓	✓	✓	–	
Psychotria densinervia (K.Krause) Verdc.	A(i), A(iii)	✓	–	✓	–	–	
Psychotria droissartii O.Lachenaud	A(i)	✓	✓	✓	–	–	
Psychotria lanceifolia K.Schum.	A(i)	–	–	✓	–	–	Common

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Sabicea apocynacea (K.Schum.) Razafim.	A(i)	✓	✓	✓	–	–	
Sabicea laxa Wernham	A(i), A(iii)	✓	✓	✓	–	–	
Sabicea trigemina K.Schum.	A(i), A(iii)	✓	✓	✓	✓	–	
Sabicea xanthotricha Wernham	A(i)	✓	✓	✓	–	–	
Sericanthe lowryana Sonké & Robbr.	A(i)	✓	✓	✓	–	–	
Tricalysia atherura N.Hallé	A(i)	✓	✓	✓	–	–	
Tricalysia ferorum Robbr.	A(i), A(iii)	✓	✓	✓	–	–	
Tricalysia vadensis Robbr.	A(i)	✓	✓	✓	–	–	
Vangueriella letestui Verdc.	A(i), A(iii)	✓	✓	✓	–	–	
Vangueriella zenkeri Verdc.	A(i), A(iii)	✓	✓	✓	–	–	
Trichostephanus acuminatus Gilg	A(i)	✓	✓	✓	–	–	
Allophylus zenkeri Gilg ex Radlk.	A(i)	✓	✓	✓	–	–	
Deinbollia pycnophylla Gilg ex Engl.	A(i)	✓	✓	✓	–	–	
Placodiscus angustifolius Radlk.	A(i)	✓	✓	✓	–	–	
Baillonella toxisperma Pierre	A(i)	–	–	–	–	✓	
Manilkara zenkeri Lecomte ex Aubrév. & Pellegr.	A(i)	✓	✓	✓	–	–	
Craterosiphon pseudoscandens Domke	A(i)	✓	✓	✓	–	–	
Dicranolepis polygaloides Gilg ex H.Pearson	A(i)	✓	–	–	–	–	

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Psychotria retrorsipilis O.Lachenaud	A(i), A(iii)	✓	✓	✓	✓	–	
Pavetta robusta Bremek.	A(i)	✓	✓	✓	–	–	
Psychotria villicarpa O.Lachenaud ssp. sessilis O.Lachenaud	A(i), A(iv)	✓	✓	✓	✓	–	
Corynanthe brachythyrsus K.Schum.	A(i)	✓	✓	✓	–	–	
Salacia volubilis Loes. & H.J.P.Winkl.	A(i)	–	–	–	–	–	
Uvariopsis zenkeri Engl.	A(i)	–	–	–	–	–	
Balonga buchholzii (Engl. & Diels) Le Thomas	A(i)	✓	✓	✓	–	–	
Strychnos mimfiensis Gilg ex Leeuwenb.	A(i)	✓	✓	✓	–	–	
Rinorea microglossa Engl.	A(iii), A(iv)	✓	✓	✓	–	–	
Dischistocalyx rivularis Bremek.	A(i)	✓	✓	✓	✓	–	
Hexalobus bussei Diels	A(i)	✓	✓	✓	–	–	
Callichilia monopodialis (K.Schum.) Stapf	A(i)	✓	✓	✓	–	–	
Cnestis macrophylla Gilg ex G.Schellenb.	A(i)	✓	✓	✓	–	–	
Rinorea amietii Achound.	A(i)	✓	✓	✓	–	–	
Beilschmiedia kostermansiana Robyns & R.Wilczek	A(i), A(iii), A(iv)	✓	✓	✓	✓	–	
Beilschmiedia papyracea (Stapf) Robyns & R.Wilczek	A(i), A(iii), A(iv)	✓	✓	✓	✓	–	
Phyllanthus aspersus Jean	A(i), A(iii), A(iv)	✓	✓	✓	✓	–	

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F.Brunel & J.P.Roux							
Beilschmiedia cinnamomea (Stapf) Robyns & R.Wilczek	A(i)	✓	✓	✓	–	–	
Beilschmiedia nitida Engl.	A(i), A(iii)	✓	✓	✓	–	–	
Beilschmiedia myrciifolia (S.Moore) Robyns & R.Wilczek	A(i)	✓	✓	✓	–	–	
Beilschmiedia sessilifolia (Stapf) Engl. ex Fouilloy	A(i)	✓	✓	✓	–	–	
Beilschmiedia staudtii Engl.	A(i)	✓	✓	✓	–	–	
Cassipourea dinklagei (Engl.) Alston	A(i), A(iv)	✓	✓	✓	–	–	
Diaphananthe dorotheae (Rendle) Summerh.	A(i)	✓	✓	✓	–	–	
Justicia gigantophylla (Lindau) H.J.Sm. & C.Moran	A(i), A(iv)	✓	✓	✓	–	–	
Ledermanniella thalloidea (Engl.) C.Cusset	A(i)	✓	✓	✓	–	–	
Polystachya stodolnyi Szlach. & Olszewski	A(i)	✓	✓	✓	–	–	
Xylopia calva D.M.Johnson & N.A.Murray	A(i)	✓	✓	✓	–	–	
Amphiblemma soyauxii Cogn.	A(i)	✓	✓	✓	–	–	
Beilschmiedia klainei Robyns & R.Wilczek	A(i)	✓	✓	✓	–	–	
Beilschmiedia fruticosa Engl.	A(i)	✓	✓	✓	–	–	
Beilschmiedia grandifolia (Stapf) Robyns & R.Wilczek	A(i)	✓	✓	✓	–	–	

SPECIES	QUALIFYING SUB-CRITERION	≥ 1% OF GLOBAL POPULATION	≥ 5% OF NATIONAL POPULATION	1 OF 5 BEST SITES NATIONALLY	ENTIRE GLOBAL POPULATION	SOCIO-ECONOMICALLY IMPORTANT	ABUNDANCE AT SITE
Calpocalyx atlanticus Villiers	A(i)	✓	✓	✓	–	–	
Neolemonniera batesii (Engl.) Heine	A(i)	✓	✓	✓	–	–	
Tiliacora odorata Engl.	A(i), A(iv)	✓	✓	✓	–	–	
Rinorea ebolowensis M.Brandt	A(i)	✓	✓	✓	–	–	
Ancistrorhynchus tenuicaulis Orchidaceae	A(i)	✓	✓	✓	–	–	
Aulotandra kamerunensis Loes.	A(i)	✓	✓	✓	–	–	
Clerodendrum anomalum Letouzey	A(i)	✓	✓	✓	–	–	
Culcasia bosii Ntépé Nyamè	A(i)	✓	✓	✓	–	–	
Dorstenia prorepens Engl.	A(i)	✓	✓	✓	–	–	
Isomacrolobium leptorrhachis (Harms) Aubrév. & Pellegr.	A(i)	–	–	–	–	–	
Garcinia staudtii Engl.	A(i)	✓	–	–	–	–	
Memecylon candidum, Melastomataceae	A(i)	✓	–	✓	–	–	
Piptostigma longepilosum	A(i)	✓	✓	✓	–	–	
Pseudosabicea batesii (Wernham) N.Hallé	A(i)	–	–	✓	–	–	
Psychotria arborea Hiern	A(i)	✓	✓	✓	–	–	
Psychotria minimicalyx K.Schum	A(i)	–	–	✓	–	–	
Psychotria rubripilis K.Schum.	A(i)	–	–	✓	–	–	
Psychotria senterrei O.Lachenaud	A(i)	✓	✓	✓	–	–	

SPECIES	QUALIFYING SUB-CRITERION	≥ 1% OF GLOBAL POPULATION	≥ 5% OF NATIONAL POPULATION	1 OF 5 BEST SITES NATIONALLY	ENTIRE GLOBAL POPULATION	SOCIO-ECONOMICALLY IMPORTANT	ABUNDANCE AT SITE
Rhaphiostylis elegans Engl.	A(i)	–	–	✓	–	–	
Sabicea medusula K.Schum. ex Wernham	A(i)	✓	✓	✓	–	–	
Sabicea rufa Wernham	A(i)	✓	✓	✓	–	–	
Tapinanthus preussii (Engl.) Tiegh.	A(i)	✓	–	✓	–	–	
Cola gilgiana Engl.	A(iv)	✓	✓	✓	✓	–	
Cola sulcata Engl.	A(iii)	✓	✓	✓	✓	–	
Eugenia staudtii Engl. & Brehmer	A(iv)	✓	✓	✓	–	–	
Pavetta renidens (K.Krause) Bremek.	A(iv)	✓	✓	✓	–	–	
Psychotria marantifolia O.Lachenaud	A(iv)	✓	✓	✓	–	–	

IPA criterion C qualifying habitats

HABITAT	QUALIFYING SUB-CRITERION	≥ 5% OF NATIONAL RESOURCE	≥ 10% OF NATIONAL RESOURCE	1 OF 5 BEST SITES NATIONALLY	AREAL COVERAGE AT SITE

General site habitats

GENERAL SITE HABITAT	PERCENT COVERAGE	IMPORTANCE
Forest - Subtropical/Tropical Moist Lowland Forest	–	Major
Forest - Subtropical/Tropical Moist Montane Forest	–	Major

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Agriculture (arable)	10	Major
Extractive industry	85	Major
Forestry	70	Major

Threats

THREAT	SEVERITY	TIMING
Agriculture & aquaculture - Annual & perennial non-timber crops - Shifting agriculture	High	Ongoing - increasing
Energy production & mining - Mining & quarrying	High	Future - planned activity
Agriculture & aquaculture - Annual & perennial non-timber crops - Agro-industry farming	High	Future - inferred threat

Bibliography

Droissart, Vincent; Olivier Lachenaud; Gilles Dauby; Steven Dessein; Gyslène Kamdem; Charlemagne Nguembou K.; Murielle Simo-Droissart; Tariq Stévart; Hermann Taedoumg & Bonaventure Sonké 2019. **Mine versus Wild: a plant conservation checklist of the rich Iron-Ore Ngovayang Massif Area (South Cameroon).** Plant Ecology and Evolution, Vol 152 (pub. Meise Botanic Garden and the Royal Botanical Society of Belgium), page(s) 8-29

Gonmadje, C.F., Doumenge, C., McKey, D., Tchouto, G.P.M., Sunderland, T.C.H., Balinga, M.P.B. & Sonké, B. 2011. **Tree diversity and conservation value of Ngovayang's lowland forests, Cameroon.** Biodiversity and Conservation, Vol 20, page(s) 2627-2648

Gonmadje, C.F., Doumenge, C., Sunderland, T.C.H., Balinga, M.P.B. & Sonké, B. 2012. **Analyse phytogéographique des forêts d'Afrique Centrale: le cas du massif de Ngovayang (Cameroun).** Plant Ecology and Evolution, Vol 145 (pub. Meise Botanic Garden and the Royal Botanical Society of Belgium), page(s) 152-164

Letouzey, R. 1985. **Notice de la carte phytogéographique du Cameroun au 1: 500,000..**

Cable, S. & Cheek, M. 1998. **The Plants of Mount Cameroon: A Conservation Checklist..**

Olson, D.M. et al. 2001. **Terrestrial ecoregions of the world: a new map of life on earth.** Bioscience, Vol 51, page(s) 3-938

Moudioh C., Tamehe, L., Ganno, S., Tankwa, Soares, M.B., Ghosh, R., Kankeu, B. & Nzenti, J.P. 2020. **Tectonic setting of the Bipindi greenstone belt, northwest Congo craton, Cameroon: Implications on BIF deposition.** Journal of African Earth Sciences, Vol 171(103971)

Cheek, M., Polllard, B., Darbyshire, I., Onana, J-M. & Wild, C. 2004. **The Plants of Kupe, Mwanenenguba and the Bakossi Mountains, Cameroon: a conservation checklist.**

MINFOF (Ministry of Forestry and Wildlife) & WRI (World Resources Instiute) 2021. **Forest Atlas of Cameroon.**

Paterne, M.A., Katia, M.F.A., Malquaire, K.P.R., Ahmed, K.S., Moïse, B. & Zhang, L.Q. 2019. **Sedimentological Studies of Alluvium Deposits along Ngovayang-Bipindi of Lokoundje River, Southwestern Cameroon.** International Journal of Geosciences, Vol 10, page(s) 119-139