Mount Nlonako

CMNTIPA018

Country: **Cameroon**
Administrative region: **Littoral (Region)**
Central co-ordinates: **4.91000 N, 9.95000 E**
Area: **661km²**

Qualifying IPA criteria

A(i)

IPA assessment rationale

Mount Nlonako qualifies as a potential IPA under criterion A(i) due to the presence of a large number of globally threatened species. The site would likely also qualify as a reservoir of useful species under criterion B(iii) or as an important site for nationally threatened submontane forest and moist lowland forest.

Site description

Mount Nlonako is part of the Cameroon line of volcanic uplands which stretch inland from the bay of Biafra in a northeast direction. These mountains constitute some of the few areas in tropical Africa north of the equator that exceed 1000 m in altitude, apart from the more extensive uplands of the rift valley and Ethiopian Highlands. In White's (1983) phytogeographical scheme they are part of the Afromontane archipelago-like centre of endemism. Mount Nlonako itself is on the eastern side of this chain, with the summit approximately 15km southeast of the eastern summit of the better known Mount Mwanenguba. Between these two mountains runs the major Douala-Baffoussam N5 road, along which are several large urban areas, including, at the foot of Mount Nlonako, the city of Nkongsamba with a population of c.100,000 at the 2005 census, estimated to have risen to 117,000 in 2020.
The area here proposed as an IPA approximately matches the Mount Nlonako IBA but includes a little more of the degraded western and southern slopes of Nlonako where important plant species may still survive amongst secondary forest. The southern border follows the Nkebe river and the site extends east of the peak as far as the Nkam river to incorporate a large area of little-populated, undulating lowland forest. Therefore, the site also mostly overlaps FMU 07-004 except that the FMU does not include the upper slopes of Mount Nlonako itself. Beyond the eastern boundary lies the Yabassi Key bird area incorporating Nkondjock and Yingui council forests (former Makombe forest) and then the Ebo Forest.

Botanical significance

The site is significant both for its montane and submontane forest and for the large tracts of relatively intact, lowland rainforest with semi-deciduous elements (Birdlife International, 2020). There has been little botanical surveying, especially on the eastern side. The different rock and soil types and reportedly less humid conditions (see below) may produce a somewhat unique flora compared to other nearby mountains. A large number of globally threatened species are found at the site as well as many timber species and medicinal plants utilised by the local population. Four threatened species of the genus Begonia are recorded, suggesting the area may have been part of a Pleistocene refuge, as has been suggested for amphibians (Hermann et al., 2005). Further botanical collecting is urgently needed, especially of the montane summit vegetation and eastern forest. The rare rheophyte, Ledermanniella thalloidea (EN) is included here as collections, including the type, have been made from nearby towns although it is unknown if from Mt Nlonako. Crudia letouzeyi (VU) has been collected in the vicinity of Balondo close to the proposed southern border.

Habitat and geology

Although Gartlan (1989) describes Mount Nlonako as part of the elevated gneiss and granite precambrian basement complex, more recent research (Kamgang et al., 2020; Pouclet et al., 2014) suggests it is an an igneous (90% syenite) intrusion of probable Eocene age, while the forest to the east lies on Neoproterozoic basement complex rocks. Minor amounts of extrusive rock (rhyolites and basalts) also occur. As an intrusive formation it differs from its more recent, extrusive neighbour Mount Manengouba and from Mt Kupe which may derive from a horst but is capped by basalt (Pouclet et al., 2014). The slopes are steep, especially on the western face, but also much eroded; a large crater-like culvert is found near the summit, opening to the eastern slopes which descend more gradually. Pedologically, course gravels, very acid sands and laterites are dominant (Gartlan, 1989). Soils in the lowland forest in the eastern part are unreported but are likely to be more typical laterites over basement complex rocks.

Rainfall at Nkongsamba (882 m.a.s.l) averaged 2,762 mm per year over a 34 year period (Amiet 1975, cited by Hermann et al., 2005). The tropical monsoon climate has a single summer wet season, peaking between July and September with up to 482 mm of rain per month. The winter dry season between December and February has less than 50 mm per month. At the summit of Mount Nlonako itself, annual rainfall was 3,000 mm (Valet et al., 1985). Mean annual temperature was 20 °C at the summit and 26 °C at Nkongsamba (Gartlan 1989; Valet et al., 1985 cited by Sainge et al., 2018).

Although lying less than 150 km from the Bight of Biafra coast and therefore within White's (1983) Guineo-Congolian lowland rainforest, Mount Nlonako's altitude puts it in the Afromontane zone.

Letouzey's (1965) map of Cameroon locates Mount Nlonako in a submontane-montane vegetation zone, with the eastern hinterland in the Biafran forest zone. The eastern forest is drier and less humid, with less epiphytic vegetation than that at equivalent altitude in the Bakossi-Kupe-Manengouba area (Hermann et al., 2005; Birdlife International, 2020).

Conservation issues

There has been severe degradation to the Northern slopes (facing Nkongsamba) up to at least 1000 m due to agriculture, logging and over-exploitation of medicinal plants. However, Nembot & Tchanou (1998) suggested that the steep slopes, relatively infertile soils and lack of access had generally limited damage to much of the mountain. Hermann et al. (2005) reported forest destruction on the western and northern slopes up to about 1,100m, while in the east and south the forest was much less impacted. However, some coffee cultivation also occurs on the southern slopes, and tracks were present on the eastern slopes too, with much logging in places (Hermann et al., 2005). Small villages such as Eyimbe have cultivated land on the eastern flanks and expansion of coffee farms has almost cut off the montane vegetation from the forest below (Birdlife International, 2020). The high cuvette is vegetated largely by bracken and grass. Global forest watch estimate 0.4% tree cover loss since 2000, equivalent to 6.79kt of CO_2 emission per year (Global Forest Watch, 2020).

Efforts to gain protected status for the site have been frustrated and the current status of Mount Nlonako is uncertain. The whole area was marked on the 2018 Cameroon Forest Estate map (MINFOF & WRI, 2018) as a (non-protected) forest reserve but on the 2020 map Mount Nlonako itself has been removed from the unit which is now designated as a Forest Management Unit 07-004 contracted to SCIEB with a management plan in process (MINFOF & WRI, 2020; Open Timber Portal, 2021). It was proposed in 1994 as a protected forest reserve, and WWF (2020) refer to Mount Nlonako as a protected faunal reserve but this does not appeart to have been implemented. The site has a WDPA ID number (308631) but is not included in the world database of protected sites (Protected Planet, 2022). The Cameroon NGO ERUDEF continues to push for gazettement (Ndimuh & Niba, 2018; Greenvision news, 2018), supported by research suggesting it has the richest amphibian fauna in Africa with 93 species (Hermann et al., 2005). It is one of the best sites for the giant Goliath frog (Conraua goliath, EN) as well as other globally threatened species such as Werneria mertensiana (CR) and Petropedetes perreti (EN). It is also rich in reptiles (89 species), and birds (267 species) (Ndiumuh & Niba, 2018). To the east of the site Makombe forest, part of the Yabassi Key Bird Area is apparently being developed as a large palm oil plantation concession granted to a Cameroonian company, Greenfil, part of Nana Bouba's business empire (Orozco & Salber, 2019). There appears to be much secrecy about the project and the future of this area and other huge tracts of largely intact forest in Littoral region, including Ebo forest and FMU 00-004, to the northeast remain unclear and insecure (Morgan et al., 2011). Bakaka Forest Reserve adjoins Nlonako to the south and is another important site which should be managed to maintain habitat connectivity with Mont Nlonako.

Site assessor(s)

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
Uvariodendron giganteum (Engl.) R.E.Fr.	A(i)	✓	✓	–	–	–	
Afrostyrax lepidophyllus Mildbr.	A(i)	–	–	✓	–	–	
Afzelia bipindensis Harms	A(i)	–	–	–	–	✓	
Amorphophallus preussii (Engl.) N.E.Br.	A(i)	✓	✓	✓	–	–	
Angylocalyx talbotii Baker f. ex Hutch. & Dalziel	A(i)	–	✓	–	–	–	
Antrocaryon micraster A.Chev. & Guillaumin	A(i)	–	✓	✓	–	✓	
Ardisia koupensis Taton	A(i)	✓	✓	✓	–	–	
Baillonella toxisperma Pierre	A(i)	–	–	–	–	✓	
Begonia adpressa Sosef	A(i)	✓	✓	–	–	–	
Begonia oxyanthera Warb.	A(i)	✓	–	–	–	–	
Begonia pseudoviola Gilg	A(i)	✓	✓	✓	–	–	
Begonia pelargoniiflora J.J.de Wilde & J.C.Arends	A(i)	✓	✓	✓	–	–	
Calochone acuminata Keay	A(i)	✓	–	–	–	–	
Cola megalophylla Brenan & Keay	A(i)	✓	✓	✓	–	✓	
Crateranthus talbotii Baker f.	A(i)	✓	–	–	–	–	
Entandrophragma cylindricum (Sprague) Sprague	A(i)	✓	–	–	–	✓	
Entandrophragma utile (Dawe & Sprague) Sprague	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
Entandrophragma angolense (Welw.) C.DC.	A(i)	✓	–	–	–	✓	
Eugenia fernandopoana Engl. & Brehmer	A(i)	–	✓	–	–	–	
Garcinia staudtii Engl.	A(i)	✓	–	–	–	–	
Hymenostegia talbotii Baker f.	A(i)	✓	✓	–	–	–	
Hymenostegia viridiflora Mackinder & Wieringa	A(i)	✓	–	–	–	–	
Jollydora glandulosa G.Schellenb.	A(i)	✓	✓	✓	–	–	
Loesenera talbotii Baker f.	A(i)	✓	–	–	–	–	
Lophira alata Banks ex Gaertn.f.	A(i)	–	–	–	–	✓	
Napoleonaea egertonii Baker f.	A(i)	✓	✓	✓	–	–	Frequent
Nauclea diderrichii (De Wild. & T.Durand) Merrill	A(i)	–	–	–	–	✓	
Palisota flagelliflora Faden	A(i)	✓	✓	✓	–	–	
Pararistolochia ceropegioides (S.Moore) Hutch. & Dalziel	A(i)	✓	–	–	–	–	
Aristolochia goldiena Hook.f	A(i)	–	✓	✓	–	–	
Pterygota bequaertii De Wild.	A(i)	–	–	–	–	✓	
Rhodognaphalon brevicuspe (Sprague) Roberty	A(i)	–	✓	✓	–	✓	
Sarcophrynium villosum (Benth.) K.Schum.	A(i)	✓	✓	✓	–	–	
Staurogyne bicolor (Mildbr.) Champl.	A(i)	✓	✓	–	–	–	
Strychnos gnetifolia Gilg ex Onochie & Hepper	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
Thyrsosalacia racemosa (Loes. ex Harms) N.Hallé	A(i)	✓	✓	✓	–	–	
Triclisia macrophylla Oliv.	A(i)	✓	✓	✓	–	–	
Ardisia dewitiana Taton	A(i)	✓	✓	✓	–	–	
Garcinia kola Heckel	A(i)	–	–	–	–	✓	
Begonia preussii Warb.	A(i)	✓	–	–	–	–	
Costus kupensis H.Maas & Maas	A(i)	✓	✓	✓	–	–	
Ledermanniella thalloidea (Engl.) C.Cusset	A(i)	✓	✓	✓	–	–	
Cola lomensis Engl. & K.Krause	A(iii)	✓	✓	✓	–	–	

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	90	Major
Forest - Subtropical/Tropical Moist Montane Forest	10	Major

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Forestry	90	Unknown

Threats

THREAT	SEVERITY	TIMING
Geological events - Avalanches/landslides	Medium	Past, likely to return

THREAT	SEVERITY	TIMING
Biological resource use - Logging & wood harvesting	High	Ongoing - increasing
Agriculture & aquaculture - Annual & perennial non-timber crops - Small-holder farming	High	Ongoing - trend unknown
Biological resource use - Gathering terrestrial plants - Intentional use (species being assessed is the target)	Medium	Ongoing - trend unknown

Protected areas

PROTECTED AREA NAME	PROTECTED AREA TYPE	RELATIONSHIP WITH IPA	AREAL OVERLAP
FMU 07-004	Forest Reserve (production)	protected/conservation area overlaps with IPA	90

Conservation designation

DESIGNATION NAME	PROTECTED AREA	RELATIONSHIP WITH IPA	AREAL OVERLAP
Mont Nlonako IBA	Important Bird Area	protected/conservation area matches IPA	95
Mont Nlonako IBA	Key Biodiversity Area	protected/conservation area matches IPA	–

Management type

MANAGEMENT TYPE	DESCRIPTION	YEAR STARTED	YEAR FINISHED
No management plan in place		–	–

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