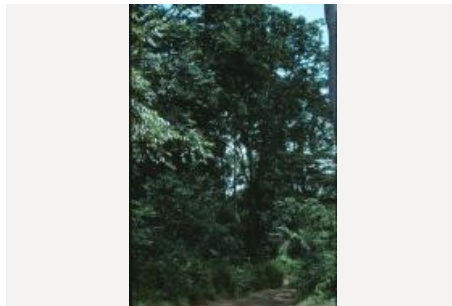
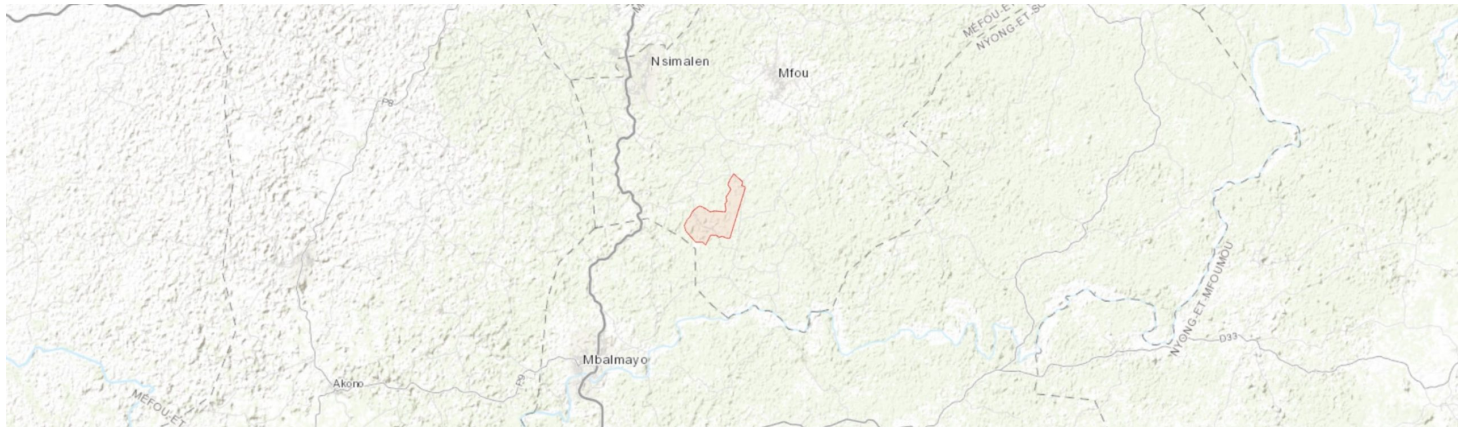


# Mefou Proposed National Park

Mefou Primate Sanctuary (Test version)

**CMNTIPA005**



Country: **Cameroon**

Administrative region: **Centre (Region)**

Central co-ordinates: **3.62608 N, 11.58130 E**

Area: **11km<sup>2</sup>**

## Qualifying IPA criteria

A(i)

## IPA assessment rationale

Mefou qualifies as a potential IPA under criterion A(i) through the presence of numerous globally threatened species which have significant populations at the site. In particular, *Phyllanthus kidna* appears to be globally endemic to this site and not closely related to other species in the region.

## Site description

The proposed Mefou National Park is an 11 km<sup>2</sup> patch of forest about 25 km south of Yaoundé, the capital of Cameroon. Since 1996 a primate rescue centre has operated at the site which was provided to the British NGO Ape Action Africa (AAA, formerly Cameroon Wildlife Aid Fund) by the Ministry of Forestry and Wildlife. It is a

refuge for chimpanzees, gorillas and other primates orphaned by the bushmeat and pet trade, and provides a wildlife education centre and visitor attraction within 45 minutes of Yaoundé. The centre employs over 50 staff, mostly from local villages. Botanically, the site is also a rare surviving patch of remaining lowland forest in the Yaoundé area (Central Region). It harbours a good diversity of species including many that are nationally and globally threatened. The site is reached from the main N2 road between Yaoundé and Mbalmayo, via the turning to the east towards the village of Ekali II, across the river Mefou and south to the Park Headquarters at Ndanan I. It is located close to Yaoundé Nsimalen international airport and approximately equidistant from the larger towns of Mbalmayo and M'fou but should not be confused with Mefou the suburb of Yaoundé.

The park is bordered to the west and east by two branches of the river Mefou which converge to form also the southern boundary before flowing south to join the Nyong river. The western half, where the main entrance is located, has been better surveyed than the eastern part which extends northwards. The forest is predominantly semi-deciduous, logged and degraded lowland forest with patches of cultivation and primate enclosures. In addition, there is largely intact evergreen gallery forest dominated by *Gilbertiodendron dewevrei*, as well as inundated areas with swamp grassland.

## Botanical significance

Prior to the surveys between 2002 and 2006 by botanists from the National Herbarium of Cameroon and RBG Kew, which contributed to the publication of the Mefou conservation checklist (Cheek et al., 2011), there had apparently been no surveys of the proposed National Park location. However, there has been some historical collection in the more general Yaoundé area by some of the major Western botanical collectors in Cameroon (Cheek et al., 2011). The site represents one of very few pieces of remaining forest in the Yaounde area and is therefore a refuge for characteristic taxa and habitat types. Letouzey (1985) mapped the wider area as degraded semi-deciduous forest and numerous indicator species of this forest type are recorded for Mefou in Cheek et al. (2011) from their surveys or logging records. Canopy species from the Ulmaceae and Malvaceae-Sterculioideae families are notable, particularly the genera *Celtis*, *Sterculia* and *Triplochiton*. While none of these are globally threatened, they represent valuable timber trees. The understory of this type of forest, which appears to differ considerably from evergreen forest, features some globally rare and threatened taxa such as *Chazaliella obovoidea* subsp. *villosistipula* (VU, Onana & Cheek, 2011). The Mefou flagship species, *Phyllanthus kidna* (CR), which is so far endemic to the site and is phylogenetically distant to other species in the region, is also a semi-deciduous species probably growing to 10–15m tall (Challen et al. 2011; Cheek & Rokni, 2017). Taxa such as these may previously have been more widespread in the Yaoundé region and are now preserved at Mefou.

Areas of evergreen gallery forest in the Park are substantially intact compared to the semi-deciduous forest and include several threatened species. This forest is dominated by the canopy tree, *Gilbertiodendron dewevrei*, and the Mefou site is an important educational example of Detarioid monodominance in tropical African forests (Letouzey, 1985; Cheek et al., 2011). The evergreen forest at Mefou is of interest also for the occurrence at lower altitude of several species usually found in submontane forest, while other coastal taxa are at higher altitude here. Furthermore, according to the “Nyong Congo hypothesis”, the Nyong river into which the Mefou drains, may have been previously connected to the Congo drainage basin, which would help explain the distribution of some species in these areas (Cheek et al., 2001, 2011). The finding by Challen et al. (2011) that the endemic *Phyllanthus kidna* is not closely related to other West African taxa is a further intriguing result. These patterns make the forest of particular interest and worthy of greater botanical research.

Overall, the forest is significant for the surprising number of taxa that are globally endangered, as well as many plants of social, economic or cultural importance, particularly timber trees. Cheek et al. (2011) reported 12 species new to science found at Mefou between 2002 and 2006. While not all have yet been described and most are known or assumed to also occur elsewhere, this illustrates clearly the importance of the site as a representative of the under examined and largely lost forests of the wider area. The proposed National Park status, the potential for tourists from Yaoundé and the existing management by AAA mean these have a good chance of being preserved at Mefou.

## Habitat and geology

Mefou lies within the South Cameroon Plateau, an area of slightly elevated, rolling topography (600–900 m) covering most of Cameroon south of the Adamaou mountains and east of the Cameroon Highlands. The Plateau is underlain by mainly metamorphic rocks, although these are in places overlain by sedimentary deposits and intruded by igneous formations, as well as typically covered by deep lateritic soils. The area south of Yaoundé encompassing the site features a complex of pre-Cambrian migmatites (crystalline, acidic rocks) hidden beneath deep, red ferallitic soils, while white sand is revealed in exposed river beds (Cheek et al., 2011).

Annual rainfall of 1,529 mm per annum is lower than that typically estimated to support evergreen forest except along river margins (Cheek et al., 2011). The equatorial climate has two wet seasons. The long wet season (September–December) peaks in October, with 288 mm of rainfall. The second shorter wet season peaks in May. During the wet seasons, extensive areas alongside the rivers are inundated, while riverbeds may be exposed during the dry seasons. Cheek et al. (2011) note that the rivers appear to fill from water flowing back upstream from the Nyong. Temperature fluctuates little around an annual mean of 24 °C.

Three main habitat types are discussed by Cheek et al. (2011). Degraded, semi-deciduous Sterculiaceae-Ulmaceae forest (type 169 of Letouzey, 1985) dominates the area with several species of the genus *Celtis*, and other indicators of semi-deciduous forest such as *Triplochiton scleroxylon* featuring in the canopy layer (Cheek et al., 2011). However, evergreen *Gilbertiodendron dewevrei* is frequent and largely intact in wide bands along the rivers. These types may combine as a mixed evergreen and semi-deciduous mosaic (Letouzey's types 170 and 171) although degradation of the deciduous forest makes it hard to interpret the natural structure. The riverine evergreen forest is often inundated for weeks or months to about 2 meters in depth. Open swamp grassland and river-edge vegetation constitutes a third category in Cheek et al.'s (2011) checklist, partially matching Letouzey's (1985) periodically inundated grassland (type 181) but *Raphia* swamp and river-edge and floating herb species are also present.

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## Conservation issues

The semi-deciduous parts of the forest have been heavily degraded by selective logging and agriculture (Cheek et al., 2011). The evergreen parts are described as largely intact although some of the valuable timber species also occur in this habitat. Logging is not presently believed to occur within the park and logging trails are becoming overgrown which helps to prevent secondary clearance for agriculture. Several timber species known from historical logging records to have been extracted from the site were not collected by the botanical surveys, suggesting they may now be rare. Several timber species such as *Diospyros crassiflora*, the source of West African Ebony, are very slow-growing and large trees will not return for many years.

Small-holder agriculture continues in parts of the park and, during

the period 2002–2006 when surveys were carried out, some extensive plots were cleared in the semi-deciduous forest and in areas of Raphia swamp. Of the two main crops Cocoa (*Theobroma cacao*) is grown in the cleared understory under the shade of the forest canopy while Cassava (*Manihot esculenta*) requires complete forest clearance. This activity was believed to be in decline at the time but it is a concern that clearance continued despite the involvement of MINEF in the National Park process. The 2002 survey team reported that delays in compensation for locals may have contributed to continued clearance of land as well as hunting and even sabotage of AAA property, although they report that an army presence subsequently halted this (Cheek et al., 2011). Many introduced species associated with cultivation are reported from the site but none are thought to present a conservation problem (Cheek et al., 2011). The wild fauna of the park has fared less well than the flora and little of it remains. It is not known to what extent the bushmeat trade is an ongoing problem at the site.

The use of the park for primate rehabilitation, while generally of huge benefit to the preservation of the flora, may also present some conflicts which will need to be managed. Cheek et al. (2011) report that plants of the threatened species *Trichalysia amplexicaulis* (VU) were discovered at a location destined for a chimpanzee enclosure and had to be moved. More generally the authors comment that pristine sites unfortunately tend to be cleared for enclosures rather than areas already cleared for farmland. An increase in tourist visitors to the park will also bring potential conservation challenges that will have to be managed. It is to be hoped that National Park status will result in greater botanical input into the management of the park and enable potential conflicts to be handled.

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### Site assessor(s)

Bruce Murphy, Royal Botanic Gardens, Kew

Martin Cheek, Royal Botanic Gardens Kew

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## 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
<i>Aulotandra kamerunensis</i> Loes.	A(i)	✓	✓	✓	–	✓	
<i>Bertiera adamsii</i> N. Hallé	A(i)	–	–	✓	–	–	
<i>Chassalia manningii</i> O.Lachenaud ined.	A(i)	✓	✓	✓	–	–	
<i>Chazaliella obovoidea</i> Verdc. subsp. <i>villosistipula</i> Verdc.	A(i)	✓	✓	✓	–	–	Common
<i>Chazaliella coffeosperma</i> (K.Schum.) Verdc.	A(i)	✓	–	✓	–	–	
<i>Corymborkis minima</i> P.J.Cribb	A(i)	✓	✓	✓	–	–	
<i>Culcasia sanagensis</i> Ntepe-Nyame	A(i)	✓	✓	✓	–	–	
<i>Cyphostemma camerounense</i> Desc.	A(i)	✓	✓	✓	–	–	
<i>Dictyophleba setosa</i> B.de Hoogh	A(i)	✓	–	–	–	–	
<i>Dracaena viridiflora</i> Engl. & K.Krause	A(i)	✓	–	–	–	–	
<i>Fernandoa ferdinandi</i> (Welw.) Milne-Redh.	A(i)	✓	✓	✓	–	–	
<i>Heckeldora ledermannii</i> (Harms) J.J. de Wilde	A(i)	✓	✓	✓	–	–	
<i>Leptonychia subtomentosa</i> K.Schum.	A(i)	✓	✓	✓	–	–	
<i>Lobelia gillettii</i> De Wild.	A(i)	–	✓	✓	–	–	
<i>Momordica camerounensis</i> Keraudren	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
<i>Morinda mefou</i> Cheek	A(i)	✓	✓	✓	–	–	
<i>Pararistolochia cerapegioides</i> (S.Moore) Hutch. & Dalziel	A(i)	–	–	✓	–	–	
<i>Phyllanthus kidna</i> Challen & Petra Hoffm.	A(i)	✓	✓	✓	✓	✓	
<i>Poecilocalyx setiflorus</i> (Good) Bremek.	A(i)	✓	✓	✓	–	–	Common
<i>Pogostemon micangensis</i> G.Taylor	A(i)	✓	✓	✓	–	–	
<i>Psychotria rubripilis</i> K.Schum.	A(i)	–	–	✓	–	–	
<i>Ancistrocladus le-testui</i> Pellegr.	A(i)	✓	–	✓	–	–	
<i>Ansellia africana</i> Lindl.	A(i)	–	–	✓	–	✓	
<i>Baillonella toxisperma</i> Pierre	A(i)	–	–	–	–	✓	
<i>Diospyros crassiflora</i> Hiern	A(i)	–	–	–	–	✓	
<i>Entandrophragma utile</i> (Dawe & Sprague) Sprague	A(i)	–	–	–	–	✓	
<i>Entandrophragma cylindricum</i> (Sprague) Sprague	A(i)	–	–	–	–	✓	
<i>Entandrophragma angolense</i> (Welw.) C.DC.	A(i)	–	–	–	–	✓	
<i>Khaya ivorensis</i> A.Chev.	A(i)	–	–	–	–	✓	
<i>Lepalaea cedrata</i> (A.Chev.) E.J.M.Koenen & J.J.F.E.de Wilde	A(i)	–	–	–	–	✓	
<i>Lophira alata</i> Banks ex Gaertn.f.	A(i)	–	–	–	–	✓	
<i>Momordica enneaphylla</i> Cogn.	A(i)	✓	–	✓	–	–	
<i>Pseudagrostistachys africana</i> subsp. <i>africana</i>	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
<i>Psychotria densinervia</i> (K.Krause) Verdc.	A(i), A(iii)	✓	–	✓	–	–	
<i>Trichilia zewaldae</i> J.J.de Wilde	A(i), A(iii)	✓	✓	✓	–	–	
<i>Floscopa mannii</i> C.B.Clarke	A(i)	✓	✓	✓	–	–	

## 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
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## General site habitats

GENERAL SITE HABITAT	PERCENT COVERAGE	IMPORTANCE
Forest - Subtropical/Tropical Moist Lowland Forest	40	Major
Artificial - Terrestrial - Subtropical/Tropical Heavily Degraded Former Forest	40	Minor
Grassland - Subtropical/Tropical Seasonally Wet/Flooded Lowland Grassland	10	Minor
Forest - Subtropical/Tropical Swamp Forest	10	Unknown

## Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Nature conservation	100	Major
Tourism / Recreation	100	Major

## Threats

THREAT	SEVERITY	TIMING
Biological resource use - Logging & wood harvesting	Medium	Past, not likely to return
Residential & commercial development - Tourism & recreation areas	Low	Ongoing - trend unknown
Agriculture & aquaculture - Annual & perennial non-timber crops - Shifting agriculture	Medium	Ongoing - trend unknown

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