

# Rumpi Hills

CMNTIPA036



Country: **Cameroon**

Administrative region: **Southwest (Region)**

Central co-ordinates: **4.90000 N, 9.15000 E**

Area: **932km<sup>2</sup>**

## Qualifying IPA criteria

A(i)

## IPA assessment rationale

Rumpi Hills qualifies as a potential IPA through criterion A(i) on the basis of numerous globally threatened plant species with important populations at the site. Of these, *Impatiens grandisepala*, *Kuloa* (*Ocotea*) *ikonyokpe*, *Craterispermum rumpianum* and *Ledermanniella prasina* (VU) are particularly noteworthy. The site would also likely qualify under criterion C as one of the best national sites for evergreen lowland tropical rainforest and/or submontane rainforest.

## Site description

Rumpi Hills Forest Reserve was established originally in 1937 (Forestry Ordinances 38 of 1937 and 16756/79 of 2 July 1941).

Despite proposals for a IUCN category IV Wildlife Sanctuary, there has been no formal change of status since (Sainge, 2016; Protected Planet, 2021). The forest reserve of 454 km<sup>2</sup> is horseshoe shaped, with the two arms facing west and sloping downhill, one terminating at Mundemba and the other where the Makunge tributary joins the Melange river in the region of Ekondo Titi. The arch of the horseshoe is in the northeast and at higher altitude, with Mount Rata, the highest point in the region at 1750 m, part of an adjacent but separate 39 km<sup>2</sup> forest reserve to the east (MINFOF & WRI, 2020). The latter is included as part of the IPA proposed here. A number of important species listed here are recorded only from areas just outside the reserve boundaries, mainly to the north and east. While it is possible many of these also occur inside we have included additional forest to the north and east to incorporate known locations. The area within the concavity of the horseshoe has also been included within the proposed IPA, increasing the total area to 932 km<sup>2</sup>. While there is little data from this area and much of it is currently demarcated as a council production forest in the process of classification (MINFOF & WRI, 2021), this area was included with the rest of the reserve as "intact forest landscape" (Potapov et al., 2016) and appears to have changed little since then (Hansen et al., 2013, updated 2020). Consequently, there is reason to expect very high plant diversity from this area too.

## Botanical significance

Like nearby Korup National Park, Rumpi Hills lie within a very high rainfall area of the Biafran rain forest block (Letouzey, 1968), a part of the Guineo-Congolian Regional Centre of Endemism (White, 1983). It is probably the best example in West or Central Africa of a forest altitudinal gradient from lowland rainforest near sea level to upper submontane or montane cloud forest at 1750 m (D. Thomas, 2022, pers. comm. 18 April; Sainge et al., 2018). Together with Korup National Park and Mokoko forest the site is also probably the most important remaining area of low altitude rainforest in this ecologically important zone; areas like Southern Bakundu and other low foothills around Mt Cameroon are badly degraded. It is one of few areas of "Intact Forest Landscape" in western Cameroon (Potapov et al., 2016; Greenpeace et al., 2021). The ravines, rapids and waterfalls of the Mana river and tributaries to the north of the existing reserve and east of Korup National Park are of particular significance for rare rheophyte species such as the local endemic *Ledermanniella prasina*.

Although only partially surveyed for plants, research by Letouzey (1968, 1986), Thomas (1996), Lachenaud et al. (2013) and Sainge et al. (2018) indicates very high diversity and many endemic or nearly endemic species. Sainge et al. (2018) identified 617 morphospecies  $\geq 1$  cm at dbh from 25 one hectare plots representing seven distinct areas of the park from the ends and the apex of the horseshoe but without sampling most of the area in between. Of these, 311 trees  $\geq 10$  cm at dbh were identified to species level. The area is likely very high in submontane endemics, vascular/non-vascular epiphytes, and species associated with ravines and waterfalls (Thomas, D., 2021, pers. comm. 18 April).

Five threatened species of *Begonia* and several of *Psychotria*, both often indicators of important refugial areas, are recorded. Three plant species are considered narrowly endemic to the site, *Kuloa* (*Ocotea*) *ikonyokpe*, *Ledermanniella prasina* (VU) and *Craterispermum rumpianum* (CR). Other notable threatened species include *Impatiens grandisepala* (CR), *Korupodendron songweanum* (EN), *Gambeya korupensis* (NE), *Piptostigma submontanum* (EN) and *Deinbollia unijuga* (EN). *Impatiens grandisepala* (CR) was recorded (Satabie 250) from along the path between Butu and Dikome balue via Lokando, around 3.5 km east of the Mount Rata reserve. This is only the second collection made of this exceptionally rare, species. *Pavetta baconiella* (VU) is included here but needs confirmation because the only Rumpi record, a plot recording by Sainge et al. (T15337) without an available specimen, is from 1,700 m, while the only other record with altitudinal data was at 50 m at nearby Korup. *Justicia leucoxiphus* (EN) is also rare and otherwise recorded only from the Bakossi area but the "Mbu Bolomi" location is probably too far (c. 10 km) northeast of the reserve to justify extending our proposed IPA boundary further. *Deinbollia angustifolia* (VU) has been recorded from close to the western tip of the reserve and therefore may potentially also occur within its boundaries.

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## Habitat and geology

Rumpi Hills has a two-season climate with a dry season between December and March with rainfall peaking in August and averaging

4933 mm p.a. at Dikome Balue 1,100 m above sea level. Sainge et al (2016) suggest highest rainfall is in the southwest corner. At Mundemba to the west of the reserve, mean rainfall averaged 5,272 mm for the period 1973-1994, with annual totals of 4,027–6,368 mm; the months of July and August both averaged over 900 mm (Mukete et al., 2018; Chuyong et al., 2000). Mean temperature is reported as around 22 degrees C (Sainge et al., 2020). Thomas (2022, pers. comm. 18 April) suggests that the seasonal climate may be mitigated by the amphitheatre-like Rumpi topology with high cloud-cover and more dry-season precipitation making it closer to true aseasonal, equatorial climate. Plant and especially epiphyte diversity would therefore be expected to be especially high.

The geological map of Yerima & Van Ranst (adapted from Nougier, 1980) indicates the Rumpi hills lying on a large basalt area. However, Ayonghe et al. (1999) suggests a more complex geology, with the site situated at the edge of a volcanic zone where pre-Cambrian basement metamorphic rocks are overlain successively by Cretaceous-Cenozoic sediments (sandstones and shales), which outcrop in the extreme southeast, and Tertiary volcanics (basalts, trachytes and tuffs) which underlie the elevated northeastern area including Mount Rata. Sainge et al. (2019) also indicate an area of forest on giant basalt rocks in the northwestern part of the reserve. While volcanic rocks underlie the hilly areas, extensive recent faulting has apparently dictated the current topography of mountainous plateaus dissected by narrow valleys (Birdlife International, 2020; Ayonghe et al., 1999).

Soils are mainly brown to yellow sandy loams and clays derived from sandstone, shales and volcanic material (Ayonghe et al., 1999, Etongo & Glover, Yerima & Rans 2005; Etongo & Glover, 2011). Impermeable clay layers are intercalated with permeable sandstones and make the terrain prone to landslides (Ayonghe et al., 1999).

Sainge (2016) and Letouzey (1985) recognise several vegetation types at the site, mainly variations on evergreen lowland rainforest (with infrequent emergents and many species and individuals of Leguminosae, Annonaceae, Phyllanthaceae and Lecythydaceae), and submontane cloud forest with abundant epiphytes and smaller trees and shrubs (particularly Rubiaceae, Euphorbiaceae, Clusiaceae, Meliaceae, Olacaceae and Salicaceae). A more open, lower and florally distinct montane (or upper submontane) vegetation is also apparent in the Mount Rata area (O. Lachenaud, 2021, pers. comm. 24 June). A distinct lowland forest on basalt rock with abundant *Crateranthus talbotii* has also been identified in the west (Sainge, 2016).

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## Conservation issues

As elsewhere in Cameroon, the main threats to the plantlife are logging and clearance (often with fire) for small scale agriculture (Beckline et al., 2018; Birdlife International, 2020; Onana & Cheek, 2011). Agro-industrial palm oil plantations have also become a major concern, creating an abrupt border at the edge of the forest, sometimes encroaching boundaries, and increasing population pressure and access to the area (Kimengsi & Lambi, 2015).

Plantations have existed here since the German colonial period but development has accelerated recently (Kimengsi & Lambi, 2015). Sainge et al. (2016) estimated that less than 10% of the original reserve had been encroached by agriculture. Other assessments from 2013 and 2018 (Birdlife International, 2020; Key Biodiversity Areas Partnership, 2020) report extensive degradation from logging and from agricultural encroachment, although the forest was considered better preserved around Mount Rata. According to Sainge (2019) there are no villages within the reserve area, but 12 within 3 km of the boundaries. However, other sources report 52 temporarily occupied offshoot villages and 19 farm settlements within the reserve, as well as other uses and claims to reserve land (Wikipedia, 2020).

To the southwest, there is considerable development threatening the forest beyond and potentially within the reserve. Large palm oil plantations are established at the ends of both arms of the reserve, while inside the horseshoe shape, a 34,400 ha Mundemba council forest is apparently in the process of being classified as a production forest (MINFOF & WRI, 2020). The N16 road to Ekondo Titi and Mundemba also provides good access to this area from the coast as well as Kumba and further east, and appears to cut across the extreme southwestern tip of the reserve near Mundemba (Beckline et al., 2018). To the north much of the area between Korup National Park and the reserve was targeted by the SGSOC/Herakles palm oil concession which provoked an international reaction and was downscaled and apparently halted but not revoked (Kupsch et al., 2014; MINFOF & WRI, 2020). This area has been described as having "exceptionally high numbers of threatened and endemic tree species" and as meeting FSC High Conservation Value (HCV) criteria for categories 1.2 and 1.3, relating to threatened species and endemic species respectively (Kupsch et al., 2014). The area might also be included in the TIPAs proposed here but unfortunately specimen data from the survey does not appear to be available and the released data does not make it possible to locate particular species to the Ndian concession block which adjoins the Rumpi reserve.

Largescale palm oil development is also leading to additional small scale palm oil farming through increased availability of seed (Beckline et al., 2018). This may encroach the reserve more insidiously.

There have been some efforts at reforestation at villages just outside the edges of the reserve (Sainge et al. 2016).

As with other proposals at Mt Kupe, Manwenguba, Ebo and Tchabal Mbabo, the drive for a more strictly protected wildlife sanctuary appears to have stalled (Sainge et al., 2019).

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## Site assessor(s)

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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>Piptostigma submontanum</i> Ghogue, Sonké & Couvreur,	A(i)	✓	✓	✓	–	–	
<i>Xylopia africana</i> (Benth.) Oliv.	A(i)	✓	✓	✓	–	–	
<i>Anthocleista scandens</i> Hook.f.	A(i)	✓	✓	✓	–	–	
<i>Begonia adpressa</i> Sosef	A(i)	✓	–	✓	–	–	
<i>Begonia bonus-henricus</i> J.J.de Wilde	A(i)	✓	✓	✓	–	–	
<i>Begonia duncan-thomasii</i> Sosef	A(i)	✓	✓	✓	–	–	
<i>Begonia oxyanthera</i> Warb.	A(i)	✓	✓	✓	–	–	
<i>Crateranthus talbotii</i> Baker f.	A(i)	✓	✓	✓	–	–	
<i>Korupodendron songweanum</i> Litt & Cheek	A(i)	✓	✓	✓	–	–	
<i>Oncoba lophocarpa</i> Oliv.	A(i)	✓	✓	✓	–	–	
<i>Strychnos staudtii</i> Gilg	A(i)	✓	–	✓	–	–	
<i>Talbotiella bakossiensis</i> Cheek	A(i)	✓	✓	✓	–	–	
<i>Uvariopsis submontana</i> Kenfack, Gosline & Gereau	A(i)	✓	✓	✓	–	–	
<i>Pseudagrostistachys africana</i> subsp. <i>africana</i>	A(i)	–	–	✓	–	–	
<i>Ancistrocladus grandiflorus</i> Cheek	A(i)	✓	✓	✓	–	–	
<i>Aulacocalyx mapiana</i> Sonké & Bridson	A(i), A(iii)	✓	–	✓	–	–	
<i>Begonia prismatocarpa</i> Hook. subsp.	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>delobata</i> Sosef							
<i>Brachystephanus giganteus</i> Champl.	A(i)	✓	✓	✓	–	–	
<i>Calochone acuminata</i> Keay	A(i)	✓	✓	✓	–	–	
<i>Deinbollia unijuga</i> D.W.Thomas	A(i)	✓	✓	✓	–	–	
<i>Impatiens grandisepala</i> Grey-Wilson	A(i)	✓	✓	✓	–	–	
<i>Magnistipula conrauana</i> Engl.	A(i)	✓	–	✓	–	✓	
<i>Mendoncia camerounensis</i> Breteler & Wieringa	A(i)	✓	–	–	–	–	
<i>Myrianthus fosi</i> Cheek	A(i)	✓	✓	✓	–	✓	
<i>Psychotria darwiniana</i> Cheek	A(i)	✓	✓	✓	–	–	
<i>Rinorea faustiana</i> Achound.	A(i)	✓	✓	✓	–	–	
<i>Schefflera mannii</i> (Hook.f.) Harms	A(i)	✓	✓	✓	–	–	
<i>Sabicea bullata</i> Zemagho, O.Lachenaud & Sonké	A(i), A(iv)	✓	–	✓	–	–	
<i>Uvariopsis korupensis</i> Gereau & Kenfack	A(i)	✓	–	–	–	–	
<i>Uvariadendron giganteum</i> (Engl.) R.E.Fr.	A(i)	✓	–	✓	–	–	
<i>Quassia sanguinea</i> Cheek & Jongkind	A(i)	✓	–	✓	–	–	
<i>Psychotria bimbiensis</i> Bridson & Cheek	A(i)	✓	–	–	–	–	
<i>Pavetta baconiella</i> Bremek.	A(i)	✓	✓	✓	–	–	
<i>Memecylon candidum</i> , Melastomataceae	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>Manilkara lososiana</i>	A(i)	✓	✓	✓	–	–	
<i>Garcinia staudtii Engl.</i>	A(i)	✓	–	✓	–	–	
<i>Craterispermum rumpianum Taedoumg &amp; Hamon</i>	A(i)	✓	✓	✓	✓	–	
<i>Chassalia laikomensis Cheek</i>	A(i), A(iii)	–	–	✓	–	–	
<i>Gaertnera letouzeyi Malcomber</i>	A(i)	✓	✓	✓	–	–	
<i>Oxyanthus okuensis Cheek &amp; Sonké</i>	A(i)	✓	✓	✓	–	–	
<i>Mussaenda epiphytica Cheek</i>	A(i)	✓	–	✓	–	–	
<i>Psychotria arborea Hiern</i>	A(i)	✓	✓	✓	–	–	
<i>Psychotria retrofracta O.Lachenaud</i>	A(i), A(iv)	✓	✓	✓	–	–	
<i>Tricalysia elmar Cheek</i>	A(i)	✓	–	✓	–	–	
<i>Trichostachys interrupta K.Schum.</i>	A(i)	✓	✓	✓	–	–	
<i>Aframomum tchoutoui D.J.Harris &amp; Wortley</i>	A(i)	✓	✓	✓	–	–	
<i>Antrocaryon micraster A.Chev. &amp; Guillaumin</i>	A(i)	–	–	✓	–	–	
<i>Begonia preussii Warb.</i>	A(i)	✓	–	–	–	–	
<i>Beilschmiedia jacques-felixii Robyns &amp; R.Wilczek</i>	A(i)	✓	✓	✓	–	–	
<i>Cola mamboana Kenfack &amp; Sainge</i>	A(i)	✓	✓	✓	–	–	
<i>Cola megalophylla Brenan &amp; Keay</i>	A(i)	✓	✓	✓	–	–	
<i>Cola suboppositifolia</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>Cheek</i>							
<i>Diospyros korupensis</i> Gosline	A(i)	✓	✓	✓	–	–	
<i>Gastrodia africana</i> Kraenzl.	A(i), A(iii)	✓	✓	✓	–	–	
<i>Pradosia spinosa</i> Ewango & Breteler	A(i)	✓	✓	✓	–	–	
<i>Berlinia hollandii</i> Hutch. & Dalziel	A(i)	✓	✓	✓	–	–	
<i>Napoleonaea egertonii</i> Baker f.	A(i)	✓	–	–	–	–	
<i>Ledermanniella prasina</i> J.J.Schenk & D.W.Thomas	A(i)	✓	✓	✓	✓	–	
<i>Afropectinariella pungens</i> (Schltr.) M.Simo & Stévant	A(i)	✓	–	–	–	–	
<i>Bulbophyllum porphyrostachys</i> Summerh.	A(i)	✓	✓	✓	–	–	
<i>Chassalia petitiana</i> Piesschaert	A(i)	✓	✓	✓	–	–	
<i>Loesenera talbotii</i> Baker f.	A(i)	✓	–	–	–	–	
<i>Octoknema bakossiensis</i> Gosline & Malécot	A(i)	✓	✓	✓	–	–	
<i>Staurogyne bicolor</i> (Mildbr.) Champ.	A(i)	✓	–	–	–	–	
<i>Talbotiella korupensis</i> Mackinder & Wieringa	A(i)	✓	✓	✓	–	–	
<i>Terminalia ivorensis</i> A.Chev.	A(i)	–	–	✓	–	–	
<i>Afzelia pachyloba</i> Harms	A(i)	✓	–	–	–	–	
<i>Microcos rumpi</i> Cheek	A(iii)	✓	✓	✓	✓	–	
<i>Cuviera trilocularis</i> Hiern	A(iv)	✓	✓	✓	–	–	
<i>Sabicea urbaniana</i> Wernham	A(iv)	✓	✓	✓	–	–	

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
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## 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	–	Major
Forest - Subtropical/Tropical Moist Montane Forest	–	Major

## Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Forestry	–	
Agriculture (arable)	–	

## Threats

THREAT	SEVERITY	TIMING
Agriculture & aquaculture - Annual & perennial non-timber crops - Shifting agriculture	High	Ongoing - increasing
Agriculture & aquaculture - Annual & perennial non-timber crops - Agro-industry farming	High	Ongoing - increasing
Transportation & service corridors - Roads & railroads	High	Ongoing - increasing
Biological resource use - Logging & wood harvesting	High	Ongoing - trend unknown
Natural system modifications - Fire & fire suppression - Increase in fire frequency/intensity	High	Ongoing - trend unknown

## Protected areas

PROTECTED AREA NAME	PROTECTED AREA TYPE	RELATIONSHIP WITH IPA	AREAL OVERLAP
Rumpi Hills Forest Reserve	Forest Reserve (production)	IPA encompasses protected/conservation area	500

## Conservation designation

DESIGNATION NAME	PROTECTED AREA	RELATIONSHIP WITH IPA	AREAL OVERLAP
Mount Rata and Rumpi Hills Forest	Key Biodiversity Area	IPA encompasses	500



DESIGNATION NAME	PROTECTED AREA	RELATIONSHIP WITH IPA	AREAL OVERLAP
Reserve		protected/conservation area	
Mount Rata and Rumpi Hills Forest Reserve	Important Bird Area	IPA encompasses protected/conservation area	500
Mount Rata and Rumpi Hills Forest Reserve	Alliance for Zero Extinction Site	IPA encompasses protected/conservation area	500

## Management type

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

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