Mount Massangulo

Monte Massangulo (Test version)

MOZTIPA039

Country: **Mozambique**
Administrative region: **Niassa (Province)**
Central co-ordinates: **-13.87657 N, 35.43433 E**
Area: **11km²**

Qualifying IPA criteria

A(i)

IPA assessment rationale

Mount Massangulo qualifies as an IPA under sub-criterion A(i), with one Endangered species, Streptocarpus erubescens, and one Vulnerable species, Oncella curviramea. As only two Mozambican endemic taxa (Pavetta gardeniifolia var. appendiculata and Ceropegia cyperifolia) and one near endemic (S. erubescens) are known from the site, Mount Massangulo does not meet the threshold for 3% of species of conservation importance under sub-criterion B(ii). It is recommended that further research be conducted into the botanical diversity of this site and to monitor the populations of the known priority species.

Site description

The Mount Massangulo IPA is a mountain in N'gauma District of Niassa Province, close to the Malawi border. The town of Massangulo, centred on one of the oldest Catholic missions in the region, lies at the foot of the mountain, while to the west is the main road from Lichinga running south to Mandimba.
The mountain itself reaches a peak of 1,640 m, with the IPA covering an area of 11 km2. Much of the IPA is miombo woodland, however, there is some montane forest in the gullies of the mountain which hosts the only population in Mozambique of the globally Endangered species, Streptocarpus erubescens.

Botanical significance

This IPA is of botanical significance as the only site in Mozambique to host Streptocarpus erubescens, a globally Endangered, near-endemic species known also from a small number of locations across the border in Malawi. Most of the localities in Malawi are threatened by clearance of the montane forest on which this species depends; therefore, the intact patches of montane forest on Mount Massangulo are of great importance for the continued survival of this species (Darbyshire & Rokni 2020). A survey of the S. erubescens population within this IPA is recommended, to establish its size and health, as the last botanical record of the species at this site was taken in 1967 (Torre #10803).
An additional threatened species, Oncella curviramea (VU), is known to occur at this site. Massangulo represents one of only two localities in Mozambique for this parasitic species (Polhill & Wiens 1998).
Two Mozambican endemics are also known to occur at this IPA, Pavetta gardeniifolia var. appendiculata, known from only Massangulo in Niassa province and a small number of other localities in Zambezia province, and Ceropegia cyperifolia (LC) which has a range of just 3,826 km2.
Numerous important timber species have been recorded from the miombo woodlands in this area including Albizia gummerifera, Brachystegia spiciformis, B. utilis and Newtonia buchananii (GBIF.org 2021), which are likely harvested and used by local people.

Habitat and geology

Massangulo reaches a peak of 1,640 m, with two smaller peaks, at 1,560 m and 1,610 m, to the south-east and south-west. The geology

of the area is mostly sandy-clay soils with the underlain by granitoid rock (Torre #10773). Much of the drainage from the mountain appears to flow southwards towards the Chitape river.
Although the site has not been subjected to a formal inventory, a number of collections have been made on and around Mount Massangulo, particularly by Portuguese botanist António Gomes e Sousa (Exell 1936). Much of the lower and mid-altitude slopes of Mount Massangulo are covered in miombo woodland, however, some of the miombo on the flatter areas of the western slope of the mountain has been converted into machambas. Miombo is composed of Brachystegia, Uapaca and Julbernardia spp. on the southern slopes (Torre #10773). Brachystegia boehmii is the dominant species in the more open canopy areas (Exell 1936). In woodland clearings, trees of Piliostigma thonningii are common with the herb Dolichos kilimandscharicus frequent in the understory (Exell 1936). At mid-altitudes the grass species Eragrostis arenicola is abundant in miombo clearings, occurring on the dry soils in these areas (Gomes e Sousa #1414).
Forested areas occur within gullies at mid to high altitudes, particularly on the south-facing slopes. The species composition of these areas has not yet been documented; however, Newtonia buchananii has been recorded within these forests (Torre #10826), and likely dominates as is the case for several montane forests on thin soils in Mozambique (Burrows et al. 2018). The montane forests on Mount Massangulo are important for the globally Endangered species Streptocarpus erubescens, which grows in the rocky understory (Darbyshire & Rokni 2020), while Oncella curviramea (VU) is known to parasitise at least one species of Combretum within these forests (Torre #11047).

Conservation issues

Mount Muruwere does not fall within a protected area, Key Biodiversity Area or Important Bird Area. However, many of the upper slopes are protected by the Environmental Act (Lei No. 20/97 of 1997) which prohibits cultivation of crops on the steeper slopes of Mozambique's mountains (Timberlake et al. 2007), although these areas of Mount Massangulo are largely undisturbed in any case, possibly due to their inaccessibility.
Since 2015 there has been significant loss of miombo on the lower western slopes of the mountain, including thinning of woodland (presumably through felling for timber or fuelwood) and clearing of land for agriculture (World Resources Institute 2020; Google Inc. 2020). While clearings on the plains around Mount Massangulo have been present for some time, with botanical records from the 1930s documenting these (Gomes e Sousa #1339), until recently the mountain itself appeared largely undisturbed (Google Inc. 2020).
Close to the IPA boundary are a number of pine and eucalyptus forestry plantations, owned by Green Resources S. A. (a Norwegian forestry company), totalling 3322 ha in Ngaúma district. Following a number of land disputes with local people, some of whom previously farmed the land converted to forestry (Røhnebæk Bjergene 2015), the company agreed in 2020 to cede their land rights to local communities in several districts across Niassa province, including in Ngaúma where this IPA is situated (Agencia de Informacao de Mocambique 2020). If the land can be farmed by local people, this may relieve pressure in the Massangulo area which may, in turn, slow further agricultural expansion within the IPA.
The faunal taxa of Mount Massangulo has not yet been catalogued, however, with a significant area of intact woodlands and forest, it is likely there will be some taxa of interest within this IPA.

Site assessor(s)

Sophie Richards, Royal Botanic Gardens, Kew

Iain Darbyshire, 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
Streptocarpus erubescens Hilliard & B.L.Burtt	A(i)	✓	✓	✓	–	–	Unknown
Oncella curviramea (Engl.) Danser	A(i)	✓	✓	✓	–	–	Unknown

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
Medium Altitude Moist Forest 900-1400 m	C(iii)	–	–	–	1

General site habitats

GENERAL SITE HABITAT	PERCENT COVERAGE	IMPORTANCE
Forest - Subtropical/Tropical Moist Montane Forest	10	Minor
Savanna - Moist Savanna	50	Major
Rocky Areas - Rocky Areas [e.g. inland cliffs, mountain peaks]	20	Minor
Shrubland - Subtropical/Tropical Moist Shrubland	10	Minor

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Agriculture (arable)	–	Minor
Harvesting of wild resources	–	Minor

Threats

THREAT	SEVERITY	TIMING
Agriculture & aquaculture - Annual & perennial non-timber crops - Small-holder farming	Low	Ongoing - trend unknown
Biological resource use - Logging & wood harvesting	Medium	Ongoing - trend unknown

Management type

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

Bibliography

Burrows, J., Burrows, S., Lötter, M. & Schmidt, E. 2018. **Trees and Shrubs Mozambique.**

Timberlake, J., Bayliss, J., Alves, T., Baena, S., Harris, T. & da Sousa, C. 2007. **Biodiversity and Conservation of Mount Chiperone, Mozambique.** Darwin Initiative Award 15/036: Monitoring and Managing Biodiversity Loss in South-east Africa's Montane Ecosystems, page(s) 1-33

World Resources Institute 2020. **Global Forest Watch.**

Agencia de Informacao de Mocambique 2020. **Mozambique: Forestry Company to Abandon Rights to 54,000 Hectares.**

Darbyshire, I. & Rokni, S. 2020. **Streptocarpus erubescens. The IUCN Red List of Threatened Species 2020: e.T149256393A153685869.**

Exell, M. 1936. **Leguminosae from Mozambique, collected by Gomes e Sousa.** Boletim da Sociedade Broteriana, Vol 12, page(s) 6-92

Røhnebæk Bjergene, L. 2015. **Forestry Investments in Niassa Province, Mozambique – Benefits and Challenges.**

GBIF.org 2021. **GBIF Occurrence Download.**

Polhill, R.M, & Wiens, D. 1998. **Mistletoes of Africa.**