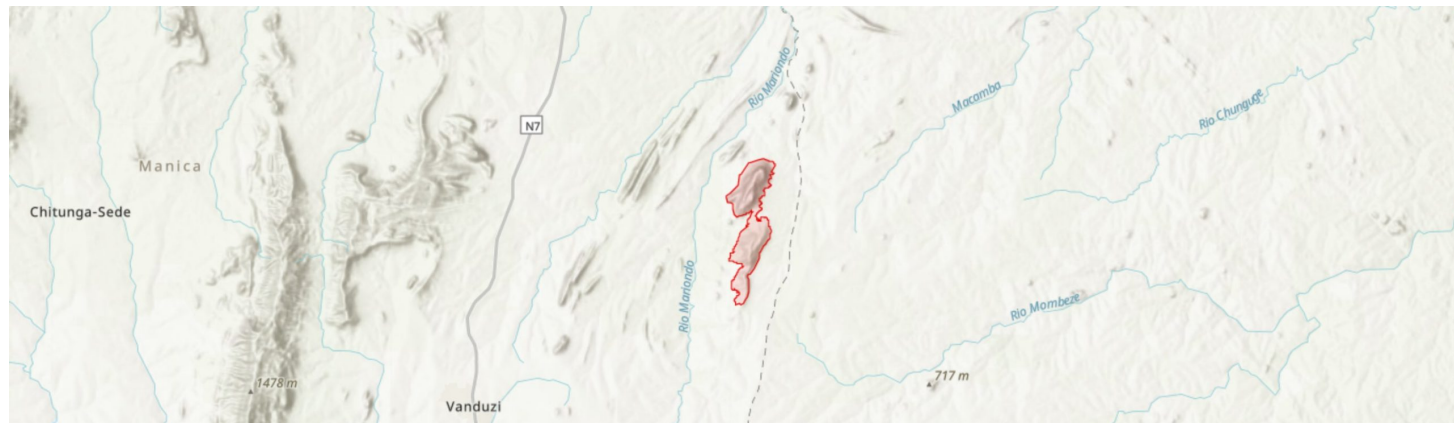


Mount Muruwere-Bossa

Monte Urueri e Bossa (Test version)

MOZTIPA040



Country: **Mozambique**

Administrative region: **Manica (Province)**

Central co-ordinates: **-18.85969 N, 33.40989 E**

Area: **65km²**

Qualifying IPA criteria

A(i)

IPA assessment rationale

The Mount Muruwere IPA qualifies as an Important Plant Area under sub-criterion A(i) due to the presence of the only confirmed population of the Critically Endangered species *Encephalartos pterogonus*. As this area has not been extensively inventoried for plant species, it is possible that additional A(i) species will be recorded.

Site description

Mount Muruwere-Bossa IPA comprises of two inselbergs 30 km north-northeast of the city of Chimoio in Manica District of Manica Province. The site includes Mount Muruwere itself, together with Monte Bossa to the south-east. Muruwere is the highest of these inselbergs peaking at 1,030 m, followed by Mount Bossa at 870 m. The IPA is 10 km² in area and to the east of the boundary is the village of Tesura, with small number of houses and agricultural land surrounding these inselbergs.

The plant diversity of the IPA has not yet been inventoried comprehensively. However, the exposed gneiss outcrops of Mount Muruwere are known to be a highly important habitat, hosting the only confirmed population of the Critically Endangered cycad, *Encephalartos pterogonus*.

Botanical significance

Mount Muruwere is of great conservation importance as the only locality from which *Encephalartos pterogonus* (CR) is known with certainty. *E. pterogonus* inhabits the granite outcrops of the inselberg. Although the steep sides make the inselberg difficult to access, this species is threatened due to over-collection. As an attractive and rare cycad, it is sought after by collectors as an ornamental and is listed, along with all other *Encephalartos* species, on Appendix I of CITES (UNEP 2021). As of 2006, there were reported to be at least 246 mature plants and reasonable recruitment of seedlings (300-400 out of 1,000 planted) following re-introduction efforts by the "Plantas de Moçambique" project in 2004 (Capela 2006). There are reports that this species may also occur on Mount Dengalenga (Donaldson 2010), 5 km west of this IPA, but this is yet to be confirmed.

Some authors (see Capela 2006) argue that *E. pterogonus* does not show enough consistency of characters to justify recognition as a species, and is, instead a form within the *E. manikensis* complex. However, as this species is currently accepted by most authorities, we accept the species here. If, however, *E. pterogonus* is in the future accepted as a form of *E. manikensis*, this site could still qualify as an IPA, as *E. manikensis* is globally Vulnerable, although the site would likely then be of lower priority.

Another species of interest, *Euphorbia graniticola* (LC), was observed on Mount Muruwere growing between crevices in the gneiss rock (T. Rulkens, pers. comm. 2021). A Mozambican endemic, *E. graniticola* is known only from the inselbergs of Manica Province (Darbyshire et al. 2019) and this IPA is one of only two, alongside Mount Zembe [MOZTIPA011], known to host this species. In addition, an as yet undescribed species of *Jatropha* was collected slightly east of this IPA and may represent an additional Mozambican endemic (T. Rulkens, pers. comm. 2021). This species requires further investigation; if it does prove to be new to science, it is likely to be globally threatened as this area is under pressure from

expanding agriculture. In this case, it should be established whether this species occurs within this IPA, and if it does not, a boundary change could be considered to encompass this species and highlight it as a conservation priority.

Dracaena pedicellata (LC) occurs in large colonies in the seasonally moist forests of Mount Muruwere. This is a species of medicinal importance; the leaves and rhizome of *S. pedicellata* are used in parts of Manica Province to treat a number of illnesses in both people and poultry (Rulkens & Baptista 2009).

Habitat and geology

The geology of the site is described as gneiss derived from granite. Both of the inselbergs comprise exposed rock outcrops which, on Mount Muruwere, particularly those at forest margins, are an important habitat for *Encephalartos pterogonus* (Donaldson 2010). There is yet to be a comprehensive survey of the botanical diversity at this site and the most recent visits were made in the late 2000s.

The following description of the vegetation on Mount Muruwere is based on personal communication with T. Rulkens (2021).

Forested areas occur mostly along rivers within gullies and on plateaux where soils are sufficiently deep. The species composition of the forest canopy has not been described, however, large groups of *Dracaena pedicellata* (LC) occur in the understory. *D. pedicellata* is known to occur with tree species such as *Albizia gummifera* and *Millettia stuhlmannii*, the latter species has been observed on Mount Muruwere and may be dominant in places. While the Chimoio area experiences a dry season between May and October, it is thought that areas where *S. pedicellata* grows tend to be moist due to frequent mists and drizzles on mountains in this area and runoff from the rocky outcrops (Rulkens & Baptista 2009). The large tree aloe *Aloidendron barberae*, has also been observed within these forests. In more exposed areas of the mountain, dry forest-thicket areas and miombo woodland inhabit the slopes, suggesting a mosaic of vegetation types has arisen on the mountain according to moisture availability.

The steeper slopes of Mount Muruwere retain a shallow layer of soil, with short grasses (the species composition of which has not yet been documented) and the lithophytic sedge *Coleochloa setifera* inhabiting these areas. In the grasslands, species such as *Aloe chabaudii*, *A. cameronii* (LC), *Euphorbia graniticola* (LC) and a *Drimia* species, possibly *Drimia intricata* var. *intricata*, also occur. *Bulbine latifolia* grows at higher altitudes near the summit. Where soils are deeper, the grass communities are taller and numerous *Aloe excelsa* may be observed.

There are few streams on the inselberg, however, there are small pools of water on rocky plateaux at mid altitudes, which are likely to be seasonal.

The surrounding plain has deep and sandy soils and was previously miombo, dominated by *Brachystegia boehmii*, which is reported to form stands in the area (Rulkens #2010/ 1) (GBIF.org 2021).

However, much of this land is now given over to agriculture, with cultivation of Sorghum and other crops (Rulkens #2010/ 1) and so has been largely excluded from this IPA.

Conservation issues

Mount Muruwere does not fall within a protected area, Key Biodiversity Area or Important Bird Area. However, given that the entire confirmed population of *Encephalartos pterogonus* occurs within this IPA, and that this species is Critically Endangered, Muruwere could qualify as an Alliance of Zero Extinction site and also as a KBA under sub-criterion Ae1.

Due to the steep sides of these inselbergs, many parts of Muruwere are difficult to access, likely providing some passive protection to most areas of vegetation. Although there is extensive conversion to agriculture in the surrounding plain, with a particular expansion of farmland between 2004 and 2009 (Google Earth 2020), the slopes of the mountains remain undisturbed. However, miombo woodland is known to act as a buffer to the denser vegetation on mountains elsewhere in Mozambique (Timberlake et al. 2007), and the loss of this vegetation around Mount Muruwere may result in greater exposure of forests on the mountain, for example with greater evapotranspiration, and changes in the plant community along the forest margins.

There is a species-specific threat to *Encephalartos pterogonus* of over-collection. As an attractive ornamental with a highly limited range, the threat of over-collection is high and there is a risk of reproductive failure through decreasing population size (Donaldson 2010). A reintroduction programme was initiated in 2003 when 1,000 seedlings were planted by the "Plantas de Moçambique" project as a conservation measure, with 300 – 400 seedlings observed to have survived following this reintroduction and the overall population consisting of at least 246 mature individuals when surveyed in the mid-2000s (Capela 2006). There has been no record of how the seedlings and population have progressed since this time. However, this is due to be surveyed in the near future as part of a project led by the University of Kent and supported by the Mohamed Bin Zayed Fund (D. Roberts, pers. comm. 2021).

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>Encephalartos pterogonus</i> R.A.Dyer & I.Verd.	A(i)	✓	✓	✓	✓	✓	Frequent

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
Savanna - Moist Savanna	—	Major
Grassland - Subtropical/Tropical High Altitude Grassland	—	Minor
Forest - Subtropical/Tropical Moist Montane Forest	—	Minor
Rocky Areas - Rocky Areas [e.g. inland cliffs, mountain peaks]	—	Minor
Artificial - Terrestrial - Arable Land	—	Major

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Agriculture (arable)	—	Major
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 - Gathering terrestrial plants	Medium	Ongoing - trend unknown

Management type

MANAGEMENT TYPE	DESCRIPTION	YEAR STARTED	YEAR FINISHED
Species management plan in place	Reintroduction of <i>Encephalartos pterogonus</i> by the "Plantas de Moçambique" project.	2004	2004
No management plan in place		–	–

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