Catapú

MOZTIPA033

Country: **Mozambique**
Administrative region: **Sofala (Province)**
Central co-ordinates: **-18.03630 N, 35.17030 E**
Area: **352km²**

Qualifying IPA criteria

A(i), C(iii)

IPA assessment rationale

Catapú qualifies as an IPA under both criterion A and criterion C. It was suggested by both Coates Palgrave et al. (2007) and Smith (2004) that the whole of the Cheringoma Plateau be designated as an IPA. However, based on the different management of Catapú and Inhamitanga, the latter being a forest reserve recently brought under the management of the Goronogsa National Park, they have been recognised as separate IPAs.
Ten species meet sub-criterion A(i) with three Endangered species (Cola clavata, Cordia torrei and Vepris myrei) and six Vulnerable species (Cordia stuhlmannii, Cordia megiae, Dorstenia zambesiaca, Habenaria stylites, Monodora stenopetala and Tarenna longipedicellata). An additional Vulnerable species, Khaya anthotheca, occurs within this IPA but does not meet the thresholds required to trigger sub-criterion A(i) due to its widespread distribution.
Catapú contains high quality areas of the nationally important Inhamitanga Sand Forest, meeting the threshold for sub-criterion C(iii).
Eleven of the sub-criterion B(ii) qualifying species for Mozambique are recorded at this site, which does not meet the threshold of encompassing 3% of species of conservation importance, but their presence is still of note, particularly as many of these species have restricted ranges.

Site description

Catapú is a timber concession in Cheringoma District, Sofala Province, at the far north of the Cheringoma Plateau. The site has been run by TCT-Dalmann Furniture since 1996 and was one of the first concessions in Africa to gain Forest Stewardship Council certification (Remane & Therrell 2019). Catapú is around 20 km south-west of the Zambezi River, with the Zangue River and flood plain to the west. To the east, is the old Caia – Dondo railway, and to the south is Inhamitanga village. The local villages Mutondo, Pungue and Santove, are involved with the activities of the concession, with the latter two falling partially within the concession (Catapú.net 2020).
The IPA is 352 km2 in area and follows the boundary of the forestry concession. Altitude ranges from 30 m, towards Chirimadzi Valley in the north, to 190 m in the dry forests towards the southern boundary. Within Catapú, the Tissadze River flows from north to south, running south-east of the EN-1 road which itself bisects the site. Although the site is a timber concession, logging is targeted towards selected species that can be coppiced, and is complemented by a replanting scheme, hence it is considered to be a sustainable operation. The vegetation of Catapú is a mosaic of sand forest, dry deciduous thicket and woodland.

Botanical significance

The Catapú concession is of botanical importance due to the extensive area of high quality Inhamitanga Sand Forest, a restricted forest type of Mozambique. This forest is part of the wider Coastal Forests of Eastern Africa Biodiversity Hotspot, recognised for being both highly biodiverse and highly threatened (Burgess et al. 2004). In keeping with its hotspot status, the site itself is botanically rich. A survey of woody vegetation here found 238 species and infraspecific taxa from 167 genera and 59 families (Coates Palgrave et al. 2007). Although the majority (64.5%) of species recorded from this site are

shared with the wider southern African flora region, ten species recorded are Mozambican endemics. These endemics include an as yet undescribed species of Dovyalis, Dovyalis sp. A of Trees and Shrubs Mozambique (Burrows et al. 2018), which is known only from this site and neighbouring Inhamitanga Forest Reserve; this species was previously confused with the Tanzanian species D. xanthocarpa.
In addition, a number of globally threatened species occur within Catapú, with ten species recorded to date. For some of these species, with threats from agricultural conversion elsewhere within their restricted ranges, Catapú is of major importance for the prevention of further declines and extinction. This IPA covers much of the range of two Vulnerable species, Cordia megiae and Dorstenia zambesiaca, both known only from the Cheringoma District (Coates Palgrave et al. 2014b; Mynard & Rokni 2019). Contrastingly, Khaya anthotheca (East African Mahogany - VU) is found across tropical Africa but is threatened by harvesting for timber (Hawthorne 1998). Furthermore, Coffea racemosa (Inhambane coffee - NT), a crop wild relative of commercial coffee, is recorded from this IPA and is itself roasted and ground locally to make coffee (Rodrigues et al. 1975). A small number of hardwood species are harvested for timber, including Millettia stuhlmannii, Afzelia quanzensis (LC) and Cordyla africana (LC) (Coates Palgrave et al. 2007).

Habitat and geology

The substrate of this site is mostly sandy soils, underlaid by sublittoral sands, with outbreaks of sandstone and calcareous conglomerates. The sublittoral sands are of great importance as they accumulate the water necessary to support tall forest trees (Coates Palgrave et al. 2007). Around the pans and floodplains, particularly to the west along the Zangue River, are black clay alluvial soils which are seasonally wet (Coates Palgrave et al. 2014a).
The below habitat description is based on surveys of the concession completed by Coates Palgrave et al. (2007) – species lists can be viewed in this paper. The vegetation of Catapú is described as a mosaic of forests, woodland and thicket. Woodland can be further subdivided into miombo, which occurs towards Inhamitanga village in the south-eastern corner of the concession, and undifferentiated woodland, which lacks the mycorrhizal associations and dominant species that define miombo (B. Wursten, pers. comm. 2020), the latter vegetation covering a greater area of the IPA. The variation in plant communities may be related to moisture and nutrient levels in the substrate. In the nearby Inhamitanga Forest Reserve, for example, it is reported that floral composition varies with soil clay content, which has a greater capacity for water storage (Müller et al. 2005).
This site contains a significant area of the restricted forest type, Inhamitanga Sand Forest. This forest is often patchy within the mosaic but is more dominant along the Via Pungue road (-18.021°, 35.171°), and in the southern portion of the IPA between the Tissadze River and EN-1 (-18.125°, 35.150°). Dominant canopy species include: Afzelia quanzensis, Balanites maughamii, Cordyla africana, Fernandoa magnifica, Terminalia sambesiaca and Xylia torreana. Emergent trees above the canopy include Adansonia digitata and Millettia stuhlmannii, while the understory is sparse with almost no ferns, herbs or grasses. This absence of a herbaceous understory is typical of Inhamitanga Sand Forest (B. Wursten, pers. comm. 2020). There are, however, understory shrubs, including the Mozambican endemic Millettia mossambicensis, Drypetes reticulata and many species of liana (as listed in Coates Palgrave et al. 2007).
In neighbouring Inhamitanga it has been reported that, in areas with higher moisture availability, there are areas with evergreen elements, where trees such as Celtis mildbraedii and Drypetes gerrardii are more prevalent (Müller et al. 2005). Such a pattern is likely also reflected in the Inhamitanga Sand Forest within this IPA.
To the east of the Tissadze river, variation in the mosaic is more prominent with species composition and vegetation density varying between forest, thicket and woodland. Much of the woodland patches are undifferentiated, rather than miombo, with emergent trees including Rhodognaphalon mossambicense, Newtonia hildebrandtii and Millettia stuhlmannii. Forest species, such as Dalbergia boehmii, Drypetes reticulata and Strychnos madagascarensis form dense stands. Thicket vegetation, which is similarly dense but with a lower canopy, also features D. reticulata and S. madagascariensis along with species such as Albizia anthelmintica, Diospyros loureiriana and D. senensis are more typical of scrubby areas.
Towards the Tissadze River bridge (-18.184°, 35.149°), in the southernmost corner of the IPA, the most well-defined area of miombo woodland is recorded. Vegetation is sparse with little grass cover and few shrubs, suggesting poorer soils in this area (Coates Palgrave et al. 2007). Brachystegia spiciformis is the dominant miombo species. Trees are widely spaced, although some vegetation is concentrated around termite mounds, pans or on riverbanks where typical species include Cleistochlamys kirkii, Dovyalis hispidula, Flueggea virosa and Strychnos potatorum. Pans are numerous within the forest/thicket/woodland mosaic. They appear as grass-covered depressions of 0.5 hectares or more and are often bordered by trees such as Combretum imberbe and Acacia robusta subsp. usambarensis.
Mean annual rainfall at the site is between 700 and 1,400 mm, with the rainy season occurring November and March, while temperatures at nearby Inhamitanga town reach an average high of 28°C between October and December and a low of 21°C in June and July (Coates Palgrave et al. 2007; World Weather Online 2021). For several years in the 2000s, below average rainfall was recorded at the site and, during this particular period of water scarcity, A. robusta subsp. usambarensis was observed to be dying as the pans remained dry (Coates Palgrave et al. 2007).
To the west of the site is the Zangue river and floodplain. The grassland on alluvial soil here is of great importance as it is one of the few sites from which the highly range-restricted Acacia torrei (LC) has been recorded (Coates Palgrave et al. 2014a). Although much of the habitat lies outside of the IPA boundary, and there are no collections here, it is possible that Acacia torrei occurs towards the eastern boundary.

Conservation issues

The importance of Inhamitanga Forest has long been recognised, with Inhamitanga Forest Reserve established over 50 years ago, covering only 18 km2 of this IPA, following the 213 road from Inhamitanga village. However, few people knew of its existence and little formal protection has been afforded to the site (Coates Palgrave et al. 2007). As a result, the south-western portion of the reserve and surrounding woodland have been heavily degraded through intense and frequent burning, with some trees isolated by up to 100 m (Müller et al. 2005). In neighbouring Catapú, there is an area of sensitive forest to the east of the concession that is reported to be fire-intolerant and so is protected within a firebreak (Coates Palgrave et al. 2007). There may, therefore, be similarities in ecology between the fire-intolerant vegetation within Catapú and the woodlands in the south-west of Inhamitanga which may explain the intense degradation in this part of the IPA.

Despite past disturbances from fire, there is low population pressure on the area as a whole, with anthropogenic activities mostly limited to Inhamitanga village, to the south-west corner, and agricultural land outside the north-west corner of the IPA. The forested areas within the centre of the reserve have been subjected to some logging while the Inhamitanga-Chupanga road, which runs through the forest reserve in the south, may increase the risk of disturbance from fire, cyclones and extreme winds; however, the majority of the forest within the reserve is in good condition (Müller et al. 2005). It appears that much of the vegetation within the Inhamitanga IPA is largely undisturbed, as is suggested by satellite imagery from Google Earth and the general inaccessibility of much of the forest (Google Earth Pro 2020).

In 2017, Gorongosa National Park, in partnership with Entreposto, formally took on the former Coutada 12 hunting concession as a Gorongosa Project (Parque Nacional da Gorongosa 2020). These partners are undertaking ecological assessments, community engagement and analysis of tourism potential with a view to proposing to government that the site become part of Gorongosa National Park (Mozambique News Agency 2016). Conservation activities here are also undertaken in collaboration with neighboring Catapú (M. Stalmans, pers. comm. 2021), providing a landscape-scale approach to conserving the important Inhamitanga Sand Forest habitat.

Inhamitanga IPA also falls within the vast Gorongosa-Marromeu Key Biodiversity Area (KBA), with three trigger species for this KBA (Cordia stuhlmannii, Dorstenia zambesiaca and Tarenna longipedicellata) also recognised as priority species for this IPA.

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
Cordia stuhlmannii Gürke	A(i)	✓	✓	✓	–	–	Occasional
Cordia megiae J.E.Burrows	A(i)	✓	✓	✓	–	–	Occasional
Dorstenia zambesiaca Hijman	A(i)	✓	✓	✓	–	–	Frequent
Tarenna longipedicellata (J.G.García) Bridson	A(i)	✓	✓	✓	–	–	Scarce
Cola clavata Mast.	A(i)	✓	✓	✓	–	–	Common
Khaya anthotheca C.DC.	A(i)	–	–	–	–	✓	Unknown
Monodora stenopetala Oliv.	A(i)	✓	✓	✓	–	–	Unknown
Habenaria stylites Rchb.f. & S.Moore subsp. johnsonii (Rolfe) Summerh.	A(i)	✓	✓	✓	–	–	Unknown
Cordia torrei E.S.Martins	A(i)	✓	✓	✓	–	–	Scarce
Vepris myrei (Exell & Mendonça) Mziray	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
Inhamitanga Sand Forest	C(iii)				

General site habitats

GENERAL SITE HABITAT	PERCENT COVERAGE	IMPORTANCE
Savanna - Moist Savanna	–	Major
Forest - Subtropical/Tropical Dry Forest	–	Major
Grassland - Subtropical/Tropical Seasonally Wet/Flooded Lowland Grassland	–	Minor
Wetlands (inland) - Seasonal/Intermittent Freshwater Marshes/Pools [under 8 ha]	–	Minor

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Nature conservation	–	Major
Tourism / Recreation	–	Minor
Forestry	–	Major
Extractive industry	–	Minor

Threats

THREAT	SEVERITY	TIMING
Natural system modifications - Fire & fire suppression - Increase in fire frequency/intensity	Medium	Past, likely to return

Protected areas

PROTECTED AREA NAME	PROTECTED AREA TYPE	RELATIONSHIP WITH IPA	AREAL OVERLAP
Inhamitanga	Forest Reserve (conservation)	protected/conservation area is adjacent to IPA	–

Conservation designation

DESIGNATION NAME	PROTECTED AREA	RELATIONSHIP WITH IPA	AREAL OVERLAP
Zambezi Delta	Important Bird Area	protected/conservation area is adjacent to IPA	–
Zambezi Delta	Ramsar	protected/conservation area is adjacent to IPA	–
Gorongosa-Marromeu	Key Biodiversity Area	protected/conservation area encompasses IPA	370

Management type

MANAGEMENT TYPE	DESCRIPTION	YEAR STARTED	YEAR FINISHED
Sustainable Forestry management in place	Sustainable forestry management of the site by TCT Dalmann.	1996	–

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