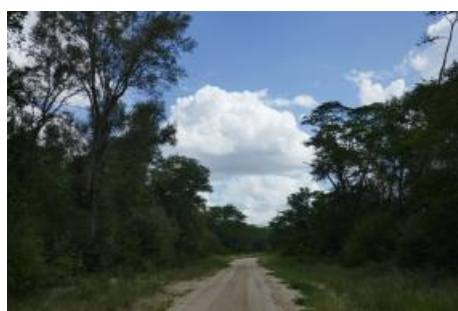
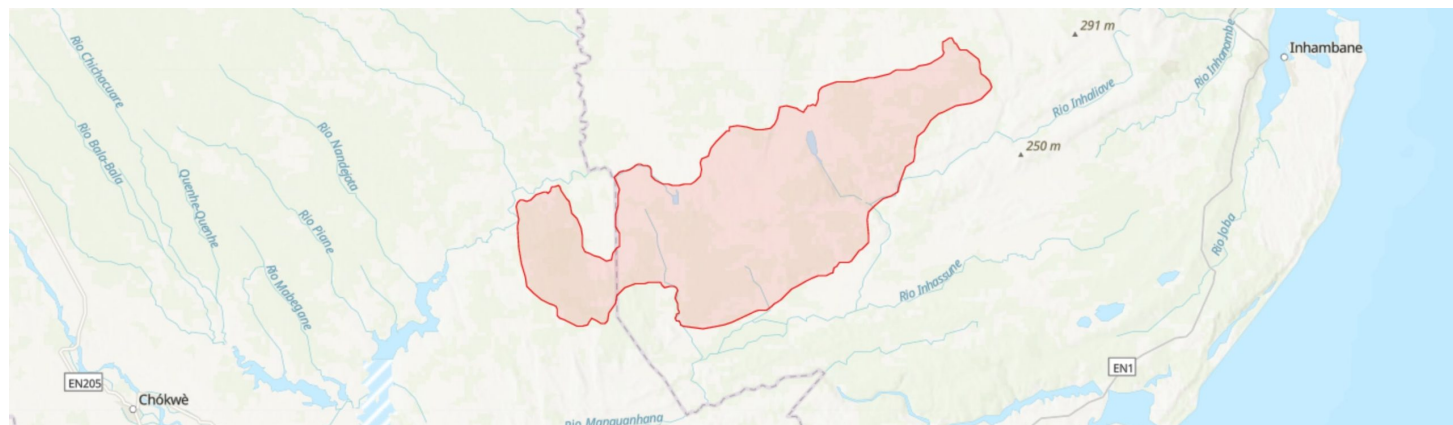


Panda-Manjacaze

MOZTIPA016



Country: **Mozambique**

Administrative region: **Inhambane (Province)**

Central co-ordinates: **-24.18378 N, 34.12489 E**

Area: **2599km²**

Qualifying IPA criteria

A(i), A(iv)

IPA assessment rationale

The Panda-Manjacaze area qualifies as an IPA under criteria A and C. Under criterion A(i), the site supports important populations of five globally threatened plants – it is the only known site globally for *Guibourtia sousae* (CR) and is the only site within the Mozambique IPA network for *Cola dorrii* (EN). Under criterion A(iv), the range-restricted Mozambique endemic *Indigofera mendoncae* (DD) occurs at this site; again, this is the only site for this species within the IPA network.

Site description

The Panda-Manjacaze IPA covers an area of ca. 2,600 km², in Panda District of southwest Inhambane Province and Manjacaze

(Mandlakazi) and Chibuto Districts of southeast Gaza Province. It lies to the northwest of the Panda-Manjacaze road (417), west of Panda town and north of Manjacaze town, ca. 60 – 120 km inland from the Indian Ocean coastline. This large area supports a rich mosaic of habitats including important areas of dry forests on deep sands which are important for a range of rare and threatened plant species some of which are on the northern edges of their range here. The site overlaps with an Important Bird Area, the Panda *Brachystegia* woodlands IBA, but is not formally protected at present.

Botanical significance

Significant areas of *Androstachys johnsonii*-dominated dry forest occur within the Panda-Manjacaze site. This timber tree, the only species in the genus *Androstachys*, occurs in southern Africa and Madagascar where it forms dense stands, usually in well-drained rocky areas. In Inhambane it forms a distinctive dry forest on raised sands. The timber, known locally as ‘mecrusse’ or ‘cimbirre’, is durable and sought after for construction and, as a result, *Androstachys* forest has become fragmented both nationally and within this IPA. The sand forest habitat at Panda-Manjacaze supports several globally threatened plant species. These include the Critically Endangered *Guibourtia sousae*, a tree species apparently endemic to this IPA, where it is known only from the type collection from 1936 (Gomes e Sousa #1927; Darbyshire et al.

2018). This species has not been rediscovered despite recent efforts (Osborne et al. 2019; J.E. Burrows, pers. comm.), but it could be easily overlooked as it is vegetatively similar to *G. conjugata* which is a common component of these dry forests. Two Endangered Maputaland endemic species, *Cola dorrii* and *Xylopia torrei*, were first discovered within this IPA during botanical fieldwork in 2019 (Osborne et al. 2019) and this site represents the northernmost limits of their respective ranges. The Vulnerable taxa *Acridocarpus natalitius* var. *linearifolius* and *Euphorbia baylissii* are also recorded from these forests, and several other notable shrubby species occur, including the localised and uncommon *Ephippiocarpa orientalis*, the Mozambican near-endemic *Microcos* (*Grewia*) *microthyrsa* and the Maputaland endemic *Psydrax fragrantissima* (NT).

The seasonally wet grasslands that occur extensively between the raised sands also support a number of interesting species, include the little-known national endemic *Indigofera mendoncae* (DD) and the scarce *Striga junodii* for which this is, again, one of the northernmost known localities. Other significant species that occur within the IPA include the scarce national endemic *Celosia nervosa* (DD), and important populations of two near-endemic species that are assessed as Near-Threatened, the scarce erect or scrambling shrub *Sclerochiton coeruleus* and the cycad *Encephalartos ferox* subsp. *ferox*. Large areas of the site are not well-studied botanically and other notable plant species are likely to occur here. In addition to the sand forest habitat, the Panda-Manjacaze IPA includes valuable woodlands, wetlands, and seasonally flooded savanna grasslands.

Habitat and geology

The Panda-Manjacaze IPA is in a low-lying area of mostly flat terrain on sandy soils on gently undulating Quaternary dune deposits, with an elevation ranging from 20 to 150 m asl. The site consists of a mosaic of habitats depending on the gradual variation in elevation, with large areas of woodland and seasonally wet savanna grassland, and smaller areas of dry forest, groundwater forest, lakes, and wetlands. Much of the survey work from which the following habitat notes are derived was conducted in the area between Chichocochoa and Chihuwane to the southwest of Panda (Osborne et al. 2019).

On satellite imagery (Google Earth Pro 2021), *Androstachys*-dominated dry forest fragments are clearly distinguishable by their very dark green colour compared to the surrounding paler green secondary forest and woodland. The *Androstachys* forest tends to support few other tree species, with the exception of *Guibourtia conjugata*, which can be co-dominant and is also the dominant species in surrounding secondary forest. A range of understory shrubs are frequent, including *Croton pseudopulchellus*, *Drypetes arguta*, *Hyperacanthus microphyllus*, *Salacia leptoclada*, *Suregada zanzibarensis* and *Vepris* sp., with *Boscia foetida*, *Combretum celastroides* and *Margaritaria discoidea* common along margins and clearings. *Warneckea sansibarica* can be frequent in the understory of *Guibourtia*-dominated forest. Some small patches of a more thicket-like woodland with *Diospyros rotundifolia*, *Mimusops caffra* and *Ochna natalitia* are noted on deep sands, appearing reminiscent of the coastal woodlands and thickets of Maputaland.

The extensive miombo woodlands here are almost exclusively dominated by *Brachystegia spiciformis*, often in pure stands. Much of the woodland is secondary with a canopy height of ca. 8 m though occasional larger trees remain including to 15 m tall and 50 cm dbh. A range of herbs and shrubs occur in the understory, and the cycad *Encephalartos ferox* subsp. *ferox* is frequent in some woodland patches. A drier miombo woodland, the Pangué dry miombo of Lötter et al. (in prep.), is recorded from the north of the IPA.

Extensive savanna grasslands occur in low-lying, seasonally wet areas and are interspersed with small woodland patches. These areas burn naturally in the dry season, as indicated by an abundance of perennial suffruticose species with signs of previous burning at the stem bases. Common grass species recorded here include *Chrysopogon serrulatus*, *Cymbopogon caesius*, *Diheteropogon amplexens*, *Eragrostis* sp. and *Setaria sphacelata*. Common woody species include the palms *Hyphaene coriacea* and *Phoenix reclinata*, together with *Acacia* sp., *Syzygium cordatum* and *Terminalia sericea*, whilst *Brachystegia spiciformis* occurs in drier areas. The suffruticose shrub *Salacia kraussii* is abundant at the transition between woodland patches and open grassland. The grasslands support a range of herbaceous species, such as *Bergia decumbens*, *Chamaecrista paralias*, *Leucas milaniana* and *Vahlia capensis* subsp. *vulgaris*.

Areas of groundwater (swamp) forest occur in the lowest-lying areas, usually as ribbons along seasonal rivers and streams. These are dominated by *Syzygium cordatum*, while the forest floor is dominated by the giant climbing fern *Stenochlaena tenuifolia*. Other notable tree species in this habitat are *Ficus trichopoda* and *Voacanga thouarsii*. Some large wetlands occur, with reedbeds and permanent or seasonal lakes, but these have not been well surveyed botanically to date.

Conservation issues

Ongoing and unsustainable logging of *Androstachys johnsonii* has led to fragmentation of *Androstachys* dry forest within the Panda-Manjacaze IPA. As evident from satellite imagery (Google Earth Pro 2021), the fragmentation is particularly apparent in Panda District of Inhambane, while there appears to be larger and more intact forest patches remaining in neighbouring Gaza to the north of Manjacaze, although botanical survey is needed to confirm the quality of this forest. Regeneration of *Androstachys* on cleared land and within secondary forest patches was not seen during fieldwork in 2019 (Osborne et al., pers. obs.). Logging of the miombo woodlands for timber and charcoal production is also resulting in declines in this habitat, although miombo remains extensive at present.

There is currently very little settlement within the site, although agricultural fields surround the site to the east, south and west and may potentially expand into the IPA in the future. Other potential conservation issues include low intensity grazing of cattle and goats in the savanna grasslands, and the occasional presence of invasive *Opuntia* sp. in some areas of miombo woodland, particularly around the margins (Osborne et al. 2019). However, at present, these do not

appear to pose a serious threat to this site. The extension of the IPA across two Provinces, Inhambane (Panda) and Gaza (Manjacaze-Chibuto) may present challenges for management and so this IPA may need to be divided in the future for conservation management purposes.

The IPA overlaps with an Important Bird Area, the Panda *Brachystegia* woodlands IBA (Birdlife International 2021), reinforcing the biodiversity value and case for formal protection of this site. The miombo woodlands here are of particular importance for holding a disjunct population of Olive-headed Weaver (*Ploceus olivaceiceps*, NT). A population of African Elephant (*Loxodonta africana*, EN) is noteworthy, and evidence for their presence in the groundwater forests southwest of Panda was noted during recent fieldwork (Osborne et al. 2019). This area would also qualify as an Alliance for Zero Extinction (AZE) site based on the presence of *Guibourtia sousae*, although it is not in the current AZE network and was also not included within the recent Key Biodiversity Areas assessment for Mozambique.

Site assessor(s)

Jo Osborne, 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
<i>Xylopia torrei</i> <i>N.Robson</i>	A(i)	✓	✓	✓	—	—	Scarce
<i>Guibourtia sousae</i> <i>J.Leonard</i>	A(i)	—	—	—	✓	—	Scarce
<i>Acridocarpus natalitius</i> A.Juss. var. <i>linearifolius</i> Launert	A(i)	—	—	—	—	—	Unknown
<i>Euphorbia baylissii</i> <i>L.C.Leach</i>	A(i)	✓	—	—	—	—	Unknown
<i>Cola dorrii</i> Cheek	A(i)	✓	✓	✓	—	—	Occasional
<i>Indigofera mendoncae</i> <i>J.B.Gillett</i>	A(iv)	✓	✓	✓	—	—	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
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General site habitats

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

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Agriculture (arable)	—	Minor
Agriculture (pastoral)	—	Minor
Forestry	—	Major

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Harvesting of wild resources	–	Major

Threats

THREAT	SEVERITY	TIMING
Biological resource use - Logging & wood harvesting	High	Ongoing - trend unknown
Agriculture & aquaculture - Livestock farming & ranching - Small-holder grazing, ranching or farming	Low	Ongoing - trend unknown
Invasive & other problematic species, genes & diseases - Invasive non-native/alien species/diseases - Named species	Low	Ongoing - trend unknown
Agriculture & aquaculture - Annual & perennial non-timber crops - Small-holder farming	Low	Ongoing - trend unknown

Conservation designation

DESIGNATION NAME	PROTECTED AREA	RELATIONSHIP WITH IPA	AREAL OVERLAP
Panda Brachystegia woodlands	Important Bird Area	protected/conservation area overlaps with IPA	–

Management type

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

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