Inharrime-Závora

MOZTIPA044

Country: **Mozambique**
Administrative region: **Inhambane (Province)**
Central co-ordinates: **-24.58704 N, 35.13056 E**
Area: **31.9km²**

Qualifying IPA criteria

A(i)

IPA assessment rationale

Inharrime-Závora qualifies as an IPA under sub-criterion A(i) of the Important Plant Area criteria due to the presence of three globally Vulnerable species. Five endemic species have also been recorded; however, this only represents 1% of B(ii) qualifying species, less than the 3% threshold required. The intact coastal habitat at this site is also of botanical importance as much of this vegetation has been transformed or degraded across Inhambane Province and the Inhambane Centre of Endemism. At present, however, there is insufficient data to assess this site under sub-criterion C(iii).

Site description

Inharrime-Závora is a coastal IPA spanning either side of the boundary between Inharrime and Zavala Districts of Inhambane Province. The site is 31.9km2 in area and falls within the Inhambane Centre of Endemism (Darbyshire et al. 2019). Like much of the coastal region of this Centre of Endemism, the site is under pressure from conversion of habitat to agriculture, however, the coastal dune vegetation here is largely intact. The IPA extends from Ponta Závora in the north-east, 20 km in a south-westerly direction towards Lagoa Maiene, with Lagoa Poelela falling to the south-west of the site.

Botanical significance

The coastal vegetation of southern Inhambane is under high pressure from agriculture and large areas have already been degraded. The stretch of largely intact coastal dunes within this IPA is, therefore, of botanical importance. This habitat hosts three globally Vulnerable species: Euphorbia baylissii, an endemic species restricted to the southern coastal areas of Mozambique, alongside Allophyllus mossambicensis and Elaeodendron fruticosum, which are both endemic to Gaza and Inhambane Provinces. All three species are threatened throughout their range by conversion of coastal habitat to machambas and, to a lesser extent, the expansion of tourism. While both of these threats are present within this IPA, there is still a significant stretch of intact coastal habitat at this site and so it is a globally significant location for the conservation of these species.
In total, there are five endemic species within this IPA. Most of these species are concentrated on the coastal dunes in the core zone. One species of interest is an as yet undescribed species of Eugenia, Eugenia sp. A of Trees and Shrubs of Mozambique (Burrows et al. 2018). Recorded at Ponta Závora, this species is only known from the coastlines of Inhambane, Gaza and Maputo Provinces.
Outside the IPA, four endemic species have been recorded towards Inharrime town. Two species, Baphia ovata (NT) and Psydrax moggii, were recorded relatively recently, in 2007 (Burrows #10109) and 2009 (Burrows # 11082) respectively, from fragments of thicket vegetation at the lake edges. However, two other endemics recorded around Lagoa Poelela, Spermacoce kirkii and Millettia ebenifera, were recorded in 1955 (Exell #666) and 1944 (Mendonça #3372). Due to the highly degraded habitat beyond the coastal forest, however, these localities around Lagoa Poelela were excluded from the IPA; although some of these species may well be found within the site boundaries with further investigation.

Habitat and geology

The underlying geology of this site is of Quaternary sandstone and the soils are predominantly sandy, with some recent alluvium distributed by the rivers (Impacto Lda. 2012). Average temperatures range from 19°C in July to 28.6°C in January. The dry season is between May and October, while 74% of annual precipitation falls between November and April (República de Moçambique Ministério da Administração Estatal 2005).
Only very limited botanical surveys have been undertaken within this IPA, although recent botanic collections have been made at Ponta Závora in 2005 (J.E. Burrows and S.M. Burrows), around Lago Tsene in 2019 (see Osborne et al. 2019). The site is dominated by dense, dune thicket-forest. As with most coastal vegetation, there is a successional gradient from the foredunes to the older dunes further inland. Pioneer communities consist of species such as Sesuvium portulacastrum, Cyperus crassipes, Scaevola plumieri and Ipomoea pes-caprae, while shrubs such as Eugenia capensis subsp. capensis and Diospyros rotundifolia occur further back from the coastline at the top of the beach (Impacto Lda. 2012; Osborne et al. 2019).
Moving inland beyond these pioneer communities, trees such as Craibia zimmermanii and Afzelia quanzensis occupy the dune slopes, with the occasional Euphorbia baylissii in the shaded understory (Osborne et al. 2019). In the middle of the dune system, thicket dominate the vegetation. The species composition of these thickets includes Olax dissitiflora and Cassia abbreviata, and on older dunes the thicket canopy is around 4 m tall (Osborne #1670). The topology of the dunes provides a variety of micro-habitats, including sheltered dune slacks that host small numbers of Encephalartos ferox subsp. ferox (NT). As the thicket transitions into coastal dry forest on older dunes, with a canopy height of around 5 m, Mimusops caffra begins to dominate while other species such as Suregada zanzibariensis and Drypetes natalensis are common (Osborne et al. 2019).
Around the back of the dune system and further inland, there are a number of lagoons and channels are present at Inharrime-Závora. The lagoons in this IPA are brackish, although less saline than sea water (Hill et al. 1975). The largest body of water, Lagoa Poelela, is connected via 75 km of channels and other lagoons to the Indian Ocean. The edges of these lakes have herbaceous communities consisting mostly of Cyperaceae species, including Cyperus laevigatus, C. natalensis, and Fimbristylis dichotoma, alongside Phragmites (probably P. mauritianus) (Impacto Lda. 2012).
There has been extensive clearance of the vegetation for machambas towards the back of the dune system. Osborne et al. (2019) note that while clearings were more frequent further inland, there were also some smaller clearings observed closer to the foredunes. Crops grown in the Inharrime coastal area include rice, corn, manioc, peanuts, cashews, beans and pineapples (Impacto Lda. 2012). Small-scale coconut plantations are also frequent, with some occurring near Lagoa Poelela within this IPA (J. Osborne, pers. comm. 2021). Where machambas have been abandoned, secondary vegetation includes cashew trees (Anacardium occidentale), Salacia kraussii and Chrysocoma mozambicensis (Osborne et al. 2019).

Conservation issues

The site does not fall within a protected area, Key Biodiversity Area, Important Bird Area or RAMSAR site.
The primary threat to the vegetation within this IPA is shifting agriculture. Much of the area between Inharrime town and the coastline has already been converted to machambas, leaving only fragments of miombo. The IPA itself is under intense pressure from further expansion of agricultural land. Clearance of coastal forest at the south-eastern edge of Lagoa Poelela commenced in the mid-2000s, with the most significant clearances taking place in between 2010 and 2013 (World Resources Institute 2021). In 2019, small patches of burned vegetation, in the process of being cleared, were observed towards the foredunes, further highlighting the continued threat to the coastal dunes (Osborne et al. 2019). It is likely that the use of burning for vegetation clearance also poses the additional threat of uncontrolled fires, clearing wider swathes of vegetation than intended.
In addition to agriculture, the harvesting of trees threatens the integrity of the remnants of natural vegetation in the area. The main source of domestic fuel in Inharrime District is firewood while local timber is used for construction. For some Inharrime residents, depletion of resources has reached such an extent that they must travel over 5 km to find firewood (República de Moçambique Ministério da Administração Estatal 2005). Sustainable resource usage strategies in both Inharrime and Zavala Districts would help relieve pressure on the IPA while also securing essential resources for local people into the future. According to a 2012 report of the Inharrime coastal area, there were plans to introduce a land-use management plan for the district (Impacto Lda. 2012), however, it is unclear how much progress has been made to this end.
Towards Ponta Závora, further development of tourism may be a threat to habitats (Matimele et al. 2018). Dense coastal forest has already been cleared to make way for tourist accommodation. However, the forest setting contributes to the visitor experience (Nhanombe Lodge 2021) which may, to some extent, limit degradation of habitat.
The vertebrate taxa of this site have not yet been inventoried; however, there is a marine lab based at Závora.

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
Euphorbia baylissii L.C.Leach	A(i)	✓	✓	✓	–	–	Frequent
Elaeodendron fruti cosum N.Robson	A(i)	✓	✓	–	–	–	Unknown
Allophylus mossambicensis Exell	A(i)	✓	✓	✓	–	–	Scarce

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

General site habitats

GENERAL SITE HABITAT	PERCENT COVERAGE	IMPORTANCE
Forest	10	Minor
Wetlands (inland) - Permanent Freshwater Lakes [over 8 ha]	30	Major
Savanna - Moist Savanna	–	Major
Artificial - Terrestrial - Arable Land	–	Major

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Agriculture (arable)	–	Major
Tourism / Recreation	–	Minor

Threats

THREAT	SEVERITY	TIMING
Agriculture & aquaculture - Annual & perennial non-timber crops - Small-holder farming	High	Ongoing - trend unknown
Residential & commercial development - Tourism & recreation areas	Medium	Ongoing - trend unknown
Residential & commercial development - Housing & urban areas	Low	Ongoing - trend unknown
Biological resource use - Logging & wood harvesting	Low	Ongoing - trend unknown

Management type

MANAGEMENT TYPE	DESCRIPTION	YEAR STARTED	YEAR FINISHED
No management plan in place	Land use plan possibly in development.	—	—

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