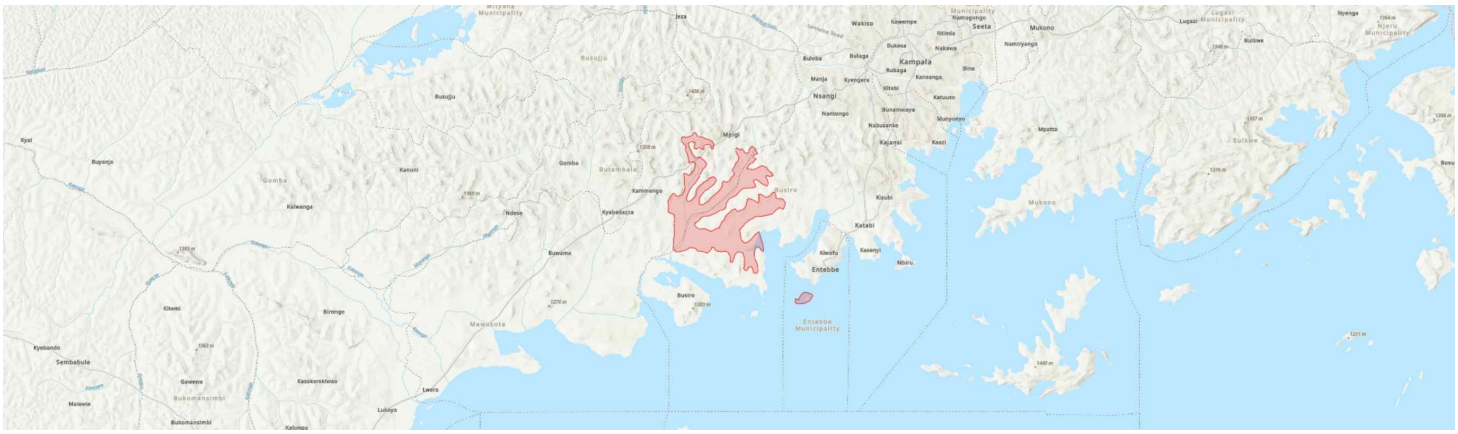
Mabamba-Mpanga

UGATIPA27



Country: **Uganda**
Administrative region: **Central (Region)**
Central co-ordinates: **0.07859 N, 32.30265 E**
Area: **142km²**

Qualifying IPA criteria

A(i), C(iii)

IPA assessment rationale

Mabamba-Mpanga qualifies as an IPA under criterion A(i) as one of the only sites nationally for the globally Endangered species Aldrovanda vesiculosa and an important site nationally for the globally Vulnerable Cnestis mildbraedii and Entandrophragma utile. Moreover, it qualifies under C(iii) as one of the best sites for nationally Vulnerable habitat freshwater marshes. This ecosystem provides numerous valuable ecosystem services and sustainable usage will protect the livelihoods associated with this site in the long-term.

Site description

The Mabamba-Mpanga IPA is located across Mpigi and Wakiso Districts of the Central Region of Uganda where the Katonga River reaches Lake Victoria. The IPA is based largely upon the Mabamba Bay Wetland System Ramsar site, a permanent marsh located on the edge of Lake Victoria, 20 km southwest of Kampala and 10 km west of Entebbe. However, the boundary of the site is modified somewhat from the Ramsar boundary to more accurately reflect the intact wetland system, and the north of the IPA incorporates Mpanga Central Forest Reserve, a small area of intact moist forest lying outside the Ramsar site. The IPA is crossed in the north by the main Kampala-Masaka road near to Mpigi town.

Botanical significance

The Mabamba Bay Wetland System is an important example of the nationally Vulnerable habitat, freshwater marsh. According to the Ministry of Water and Environment, wetlands are under significant pressure nationally and are estimated to have declined from 17.5% national coverage in the 1990s to 8.5% by 2021 (Wambede, 2021). Other wetlands, such as the Mpologoma freshwater marsh near Lake Kyoga, have been degraded due to land shortages and resulting agricultural encroachment, particularly rice farming (Bunyangha et al. 2022). Increased flooding in the Mpologoma area has been linked to this agricultural encroachment (Wambede, 2021). Conservation of the freshwater marsh within Mabamba Bay is, therefore, of great importance in order to avoid the loss of flood mitigation and many other crucial ecosystem services provided by wetland habitats (see Key ecosystem services).

There is also one globally threatened species known from the Ramsar site, the waterwheel (Aldrovanda vesiculosa) which is assessed as Endangered. While this carnivorous aquatic species is wide ranging, native to parts of Africa, Asia, Australia and Asia, it is threatened by expansion of agriculture, pollution and hydrological changes, including freshwater drainage (Cross & Adamec, 2020). Aldrovanda vesiculosa is also threatened nationally by swamp reclamation for agriculture and was therefore assessed as nationally Endangered due to a decline in its range (Kalema et al. 2016). Mabamba Bay is one of only three sites in Uganda from which this species is known and is therefore crucial to its conservation nationally. Furthermore, although not threatened or range restricted, Leersia friesii, a very uncommon grass species in Uganda, is only known from Mabamba Bay and around two satellite lakes near Nabugabo and is locally rare in all three localities (Kalema, 2005).

Mpanga Central Forest Reserve (CFR) is a small (453 ha) but important area of intact Medium Altitude Moist Forest, with over 200 tree and shrub species documented to date (Lwanga 1996),

including three threatened tree species, namely Cnestis mildbraedii (VU), Entandrophragma cylindricum (VU) and E. utile (VU).

Habitat and geology

The Mabamba Bay Wetland System is dominated by the grass Miscanthus violaceus (Miscanthidium violaceum), while the edges are largely composed of Cyperus papyrus (Byaruhanga & Kigoolo, 2005). In narrow channels of open water, species such as the waterlily Nymphaea nouchali var. caerulea and the sedge Cladium mariscus are frequent (Ministry of Water and Environment, 2015).

The edges of this wetland would previously have had areas of Piptadeniastrum-Albizia-Celtis forest, as noted in several areas by Langdale-Brown et al. (1964). However, very little of this forest remains and the many, small forest reserves and non-protected forests situated at the fringes of the wetlands appear to now encompass Eucalyptus plantations (Google Earth, 2023; Jones, 2021). A significant exception is the Mpanga CFR which still holds intact moist medium altitude mixed forest with Albizia, Antiaris, Celtis, Entandrophragma and Lovoa amongst the dominant elements (Taylor et al. 2008). Although mapped as Medium Altitude Evergreen Forest, several semi-deciduous forest indicators are present, such as Celtis spp. (Lwanga 1996).

Conservation issues

The Mabamba Bay Wetland System was designated as a Ramsar site in 2006 and so is accorded legal protection as a conservation area. The site was also recognised as an Important Bird Area (Byaruhanga et al. 2001), due to the important habitat it provides for birds such as the Vulnerable species Shoebill (Balaeniceps rex), and falls within the Katonga River Mouth Key Biodiversity Area, which is triggered by the presence of Ningu (Labeo victorianus) a species of fish endemic to the Lake Victoria Basin (Plumptre et al. 2017).

Despite its importance for both species and ecosystem services, Mabamba Bay faces numerous threats. Several of these are caused by disturbances in the catchment area and wetland shores. Wetland edge agriculture and horticulture, for instance, may be introducing agrochemicals into the waters, changing nutrient levels and ecological dynamics (Byaruhanga & Kigoolo, 2005). Loss and degradation of forest and bush burning may also lead to disruption of water dynamics in the catchment area, soil erosion and siltation of waterways and wetland areas (Zake, 2014). However, this wetland is known to play a role in water filtration, preventing and so there may be some tolerance of increased siltation (Byaruhanga & Kigoolo, 2005; Zake, 2014). The establishment of Eucalyptus plantations at the edge of the wetlands may well also impact the resilience of this ecosystem. There is evidence that Eucalyptus monocultures have lower bird diversity compared to other habitats around Mabamba Bay, however, it is not known whether planting of these trees also impacts the wider ecosystem, for instance, through altering water dynamics (Jones, 2021).

Alongside disturbances adjacent to Mabamba Bay, several threats are occurring within wetland areas. The invasive water hyacinth, Eichhornia crassipes, is present within this IPA. This species is known to outcompete other macrophytes (Lake Victoria Basin Commission, 2011) and could impact populations of Endangered Aldrovanda vesiculosa at this site.

Furthermore, prolonged drought periods are causing crops to fail and forcing people to encroach into wetland areas to extract resources (Zake, 2014). Livestock are kept in the wetlands during the dry season, while there has been increased papyrus extraction which is increasingly being used as a source of fuel alongside longstanding uses for fibres and crafts (Byaruhanga & Kigoolo, 2005; Zake, 2014). In addition, illegal sand mining threatens parts of the wetlands. Vegetation mats are cleared to access the substrate and the extracted sand is subsequently used in the construction industry (Nile Basin Initiative, 2022). Alongside threatening the ecosystem, this practice may threaten public health as the sand pits left fill with water and become breeding grounds for mosquitos (Akwetaireho & Getzner, 2010). Further research is needed to better understand how this ecosystem can be used sustainably to support livelihoods in the long term and to what extent ecosystem modifications impact the provision of ecosystem services.

In order to increase the sustainability of local livelihoods, the Lake Victoria Environmental Management Project was initiated between the governments of Kenya, Tanzania and Uganda in the late 1990s. The aims of the project include monitoring water quality, control of invasive water hyacinth and managing fisheries and use of land and wetlands (World Bank, 1996). There have since been three phases of this project, including work with stakeholders at Mabamba Bay on sustainable livelihoods (Akwetaireho & Getzner, 2010; World Bank, 2020). Environment Alert, Nature Uganda, Nature Palace and the Ecological Christian Organization in partnership with Pathfinder International have all been involved in biodiversity conservation initiatives in the area, including promoting sustainable livelihoods, upholding the site's Ramsar status and raising awareness of conservation issues (Zake, 2014).

Mpanga CFR was established in 1932 and was designated in 1951 as a Research Forest Reserve, with the aim to research the productivity of indigenous forest trees. As such, a permanent 80 x 80 m permanent research plot was established there in 1968 and has been subject to long-term survey (Taylor et al. 2008). The forest suffered from pit-sawing of timber trees prior to the 1950s but showed significant regeneration up to the 1990s. Since that time, increasing demand for timber for wood-carving and construction, heightened by proximity to the Kampala-Masaka road, has led to increased illegal logging within Mpanga (Taylor et al. 2008).

Site assessor(s)

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Date of first assessment:
4th Nov 2024

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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
Aldrovanda vesiculosa L.	A(i)	–	–	✓	–	–	Unknown
Cnestis mildbraedii Gilg	A(i)	✓	–	✓	–	–	Unknown
Entandrophragma cylindricum (Sprague) Sprague	A(i)	–	–	–	–	–	Occasional
Entandrophragma utile (Dawe & Sprague) Sprague	A(i)	–	–	✓	–	–	Occasional

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
Freshwater marshes (VU)	C(iii)	–	–	✓	93.3
Medium Altitude Evergreen Forest (VU)	C(iii)	–	–	–	25

General site habitats

GENERAL SITE HABITAT	PERCENT COVERAGE	IMPORTANCE
Wetlands (inland) - Bogs, Marshes, Swamps, Fens, Peatlands [generally over 8 ha]	–	Major
Wetlands (inland) - Permanent Rivers, Streams, Creeks [includes waterfalls]	–	Minor
Forest - Subtropical/Tropical Moist Lowland Forest	–	Minor

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Nature conservation	–	Major
Agriculture (aquatic)	–	Minor
Agriculture (pastoral)	–	Minor
Harvesting of wild resources	–	Major
Tourism / Recreation	–	Minor
Extractive industry	–	Minor

Threats

THREAT	SEVERITY	TIMING
Agriculture & aquaculture - Annual & perennial non-timber crops - Small-holder farming	Medium	Ongoing - increasing
Agriculture & aquaculture - Livestock farming & ranching - Small-holder grazing, ranching or farming	Low	Ongoing - increasing
Energy production & mining - Mining & quarrying	Medium	Ongoing - increasing
Biological resource use - Logging & wood harvesting	Medium	Ongoing - increasing
Natural system modifications - Fire & fire suppression - Trend Unknown/Unrecorded	Low	Ongoing - trend unknown
Climate change & severe weather - Storms & flooding	Unknown	Ongoing - trend unknown
Pollution - Agricultural & forestry effluents	Unknown	Ongoing - trend unknown

Protected areas

PROTECTED AREA NAME	PROTECTED AREA TYPE	RELATIONSHIP WITH IPA	AREAL OVERLAP
Mabamba Bay Wetland System	Ramsar site	protected/conservation area overlaps with IPA	134
Mpanga Central Forest Reserve	Forest Reserve (conservation)	IPA encompasses protected/conservation area	5

Conservation designation

DESIGNATION NAME	PROTECTED AREA	RELATIONSHIP WITH IPA	AREAL OVERLAP
Mabamba Bay	Important Bird Area	protected/conservation area overlaps with IPA	134
Katonga River Mouth	Key Biodiversity Area	protected/conservation area overlaps with IPA	134

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