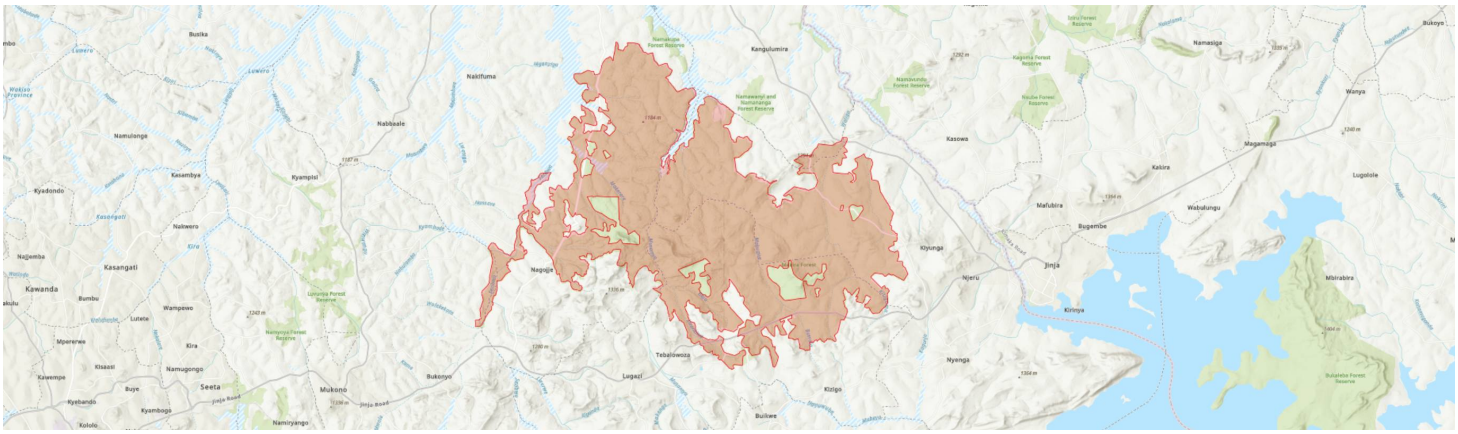
Available from https://tipas.kew.org/site/mabira/
[Accessed 16 June 2026]

Mabira

UGATIPA36



Country: **Uganda**
Administrative region: **Central (Region)**
Central co-ordinates: **0.49345 N, 32.91820 E**
Area: **302km²**

Qualifying IPA criteria

A(i), B(iii), C(iii)

IPA assessment rationale

Mabira CFR qualifies as an IPA under criterion A. Sub-criterion A(i) is triggered by the presence of 15 threatened plant taxa. It also contains 82 useful species 7.9% of the national checklist, and therefore triggers criterion B(iii). Lastly, the presence of 242 km2 of the nationally threatened Medium Altitude Semi-Deciduous Moist Forest (EN), comprising 8.1% of the national habitat, and is one of the five best sites nationally, triggering criterion C(iii).

Site description

This Important Plant Area (IPA) is situated 20 km north of Lake Victoria shoreline at the intersection of Buikwe, Kayunga and Mukono districts; 54 km east of Kampala and 26 km west of Jinja (Davenport et al. 1996). It is a medium altitude forest occupying gently undulating plains with numerous flat-topped hills and wide shallow valleys occupied by swamps (Fungo et al. 2013).

Botanical significance

Mabira CFR is the largest block of forest remaining in the central region of Uganda and represents the best opportunity to maintain a complete forest community characteristic of this important bio-geographical region (Weldemariam et al. 2017). This site contains Celtis-Chrysophyllum medium altitude moist semi-deciduous forest (EN) type D1 by Langdale-Brown et al. (1964), which represents a vegetation type that does not occur in any of the country's National Parks or Wildlife Reserves. Since this habitat type is endangered nationally, and contains 242 km2 of the habitat, comprising 8.6% of the national resource, it therefore triggers criterion C(iii) for IPA designation (Richards et al. 2024).

The Ministry of Water and Environment (2017) documented 636 plant taxa in Mabira CFR with trees, shrubs and climbers contributing 450 species. Other key taxa include 218 species of butterflies, 42 amphibians and reptiles, 23 small mammals. The existing published list of Mabira birds contains 287 species (Davenport et al. 1996) but this is being updated to 344 species (Olupot, W. in progress). The Ministry of Water and Environment (2017) further asserts that Mabira CFR has high conservation value because of the presence of 28 threatened plant taxa at local and/or global level. There are 14 globally threatened taxa known from this IPA. The nationally threatened taxa are Lovoa swynnertonii (EN), Calamus deeratus (VU), Cordia millenii (EN), Milicia excelsa (EN), Warburgia ugandensis (VU), Albizia ferruginea (EN), Gambeya albida (Syn: Chrysophyllum albidum, VU), G. muerense (Syn: Chrysophyllum muerense, VU), G. perpulchra (Syn: Chrysophyllum perpulchrum, VU), Erythrophleum suaveolens (VU), Mondia whytei (VU), Citropsis articulata (VU), Fagaropsis angolensis (VU) and Olea welwitschii (VU).

Of the globally threatened taxa, two of which are Endangered (EN): Balsamocitrus dawei and Vepris eggelingii. The Ugandan endemic B. dawei has been recorded in this IPA and elsewhere in Kigezi Wildlife Reserve, Kibale NP, Queen Elizabeth National Park UNESCO-MAB Biosphere Reserve, Budongo CFR, Zoka CFR, Kasyoha – Kitomi CFR and South Maramagambo CFR. The CFRs where it occurs are facing illegal tree felling but none of them has cleared completely (Amani et al. 2022). Vepris eggelingii, a shrub or small tree of evergreen forest,

is similarly known to be threatened at Mabira CFR by encroachment and illegal tree cutting (Amani et al. 2022).

Zanthoxylum mildbraedii, a member of the citrus family, is assessed globally as VU (Gereau et al. 2019). All Ugandan Zanthoxylum species are used medicinally, with bark and roots harvested. They are thus often spared when forests are cleared.

In addition, Rinorea beniensis and R. tshingandaensis of the violet family are both globally Vulnerable (VU) and occur within this IPA (Ntore et al. 2021; Amani et al. 2022). Both are forest understorey shrubs or small trees. In Uganda, R. beniensis is also recorded from Murchison Falls NP, Bwindi Impenetrable NP, and Budongo FR and Mabira FR. Whereas it is well protected in the national parks, the forest reserves are faced with illegal timber logging. Rinorea tshingandaensis populations are also thought to be decreasing because of habitat loss - this species' habitat is facing threats mainly through conversion to agriculture (Ntore et al. 2021).

A number of the globally, and nationally, threatened species within Mabira CFR are timber species threatened by overexploitation. Entandrophragma cylindricum and E. utile are both assessed as VU globally (Hawthorne 1998) and EN nationally (MWTA 2018). Entandrophragma cylindricum is a major source of African hardwood thus is exploited heavily throughout its range (Hawthorne 1998). In addition, E. utile was formerly common in Budongo and Mabira forests but its exploitation caused significant population reductions even in these two reserves. In all sites of its occurrence in Uganda, E. utile is now very rare. It is used for firewood, charcoal, timber, veneer (Katende et al. 1995, Kalema & Beentje 2012). It is one of the rarest of all the Entandrophragma species and indiscriminate harvesting during the years of political unrest in Uganda brought it close to extinction (Katende et al. 1995). The species is on the country's 'Reserved Species' list (a tree species of international or national importance that is endangered or rare, as declared by statutory order and is subject to such controls as the Minister may specify by order - National Forestry and Tree Planting Act 2003).

Khaya anthotheca is another hardwood species assessed as VU globally (Hawthorne 1998) and EN nationally (MWTA 2018). This species is widespread in areas of evergreen forest though it is heavily exploited, particularly in East and West Africa as an important African mahogany (Hawthorne 1998). Prunus africana has a wider distribution than K. anthotheca, occurring from the montane areas in Central Africa eastwards to East Africa and southwards to South Africa, but is also assessed as globally VU (Hills & Cheek 2021). While this tree can be harvested for its timber, the global population of P. africana is decreasing across much of its range due to unsustainable exploitation of the bark for medicinal trade. Bark removal which can kill mature individuals; alongside general reduction in the cover of Afromontane forests inhabited by this species are responsible for its decline (Hills & Cheek 2021).

The final threatened timber species, Cnestis mildbraedii, is a small understorey tree assessed as VU globally (Amani et al. 2022). In Uganda, this species is felled for timber, poles, and charcoal in most Forest Reserves (Amani et al. 2022).

Other threatened species of note include Hibiscus greenwayi (VU), which is largely restricted to Tanzania and Kenya. and Mabira is the only locality in Uganda where it is known to occur. There has been rapid transformation of this species' habitat in Kenya (IUCN SCC East African Plants Red List Authority 2013) and therefore Mabira represents an important opportunity to conserve this species. This IPA is also important for Tricalysia bagshawei subsp. bagshawei (VU). This subspecies was collected in 1922 in the forest near Lugalambo where it was described as "occupying large areas" of the forest (Maitland #501). Further surveys are needed to establish the current state of the population within this IPA.

Although this IPA is important for conserving globally threatened plants, several species are recorded as threatened within Mabira CFR. For instance, Dasylepis eggelingii (VU) is threatened by illegal tree felling for timber, firewood, poles and charcoal, and encroachment for growing Cannabis (Ministry of Water and Environment 2017, Tetra Tech ARD 2016; Kalema et al. 2021), reducing habitat quality. The invasive Broussonetia papyrifera, which occurs within this IPA (Kalema & Beentje 2012), plays a contributory role in reducing habitat quality (Kalema et al. 2021). Additionally, Gambeya muerensis (Chyrosphyllum muerense) (VU) is a species of tree only known from East DRC, South Sudan and Uganda. Within Uganda, it is only in Mabira CFR IPA where this species is recorded as abundant (Kalema & Hamilton 2020). Other locally threatened species include Citropsis articulata which is being depleted by harvesting of roots for medicine and Calamus deerratus whose stems are harvested for weaving (Olupot & Sande 2019).

Mabira also contains 82 useful species found within the national useful species checklist and makes up 7.9% of the national checklist. This includes Oryza eichingeri, which is used as food locally and serves also as a crop wild relative of domesticated rice, Oryza sativa (O'Sullivan et al. in press). In addition, Mabira hosts wild populations of Coffea canephora (Robusta coffee), which is used as a drink, as a fresh or dried snack, and is used in traditional ceremonies in Uganda. It has also been cultivated commercially in Uganda for over 200 years, and so these wild populations serve as wild germplasm important for conservation of C. canephora, especially in the face of climate change. Uganda is the centre of diversity for this important species of coffee and is the only country containing east of the Great Rift Valley (Davis et al. 2023). Therefore, the conservation of Mabira reinforces the protection of the genetic diversity of this coffee species.

Habitat and geology

The vegetation of Mabira CFR is considered to be a secondary forest, in which the distinctive vegetation types represent sub-climax communities, heavily influenced by man over prolonged periods of

time (Sangster, 1950). Howard (1991) delineated the vegetation in Mabira into; (i) Celtis/Holoptelea-dominant, mixed, (ii) mature mixed forest, (iii) Maesopsis-dominant forest, (iv) grassland, (v) poor forest, (vi) marsh, and (vii) hill forest.

The largest area of the reserve is occupied by tropical high forest communities, classified as Celtis-Chrysophyllum medium altitude moist semi-deciduous forest and the remainder by Piptadeniastrum-Albizia-Celtis medium altitude moist evergreen forest (Langdale - Brown et al. 1964). However, human activities have greatly influenced the forest condition, making some areas characteristic sub-climaxes. Sub-types of vegetation present are young or colonizing mixed forest, dominated by Maesopsis eminii, young mixed Celtis-Holoptelea and mixed forest of wet valley bottoms dominated by Baikiaea insignis (NFA 2017).

The southern part of Mabira CFR occurs at or near the origin of rivers and streams which enter Lake Victoria to the south and Lake Kyoga to the north. This narrow watershed consists of flat-topped hills which occur at almost the same altitude. Approximately 3.5 km2 of this IPA comprises isolated hills lying above 1,250 m, with 303 km2 occupying land at altitudes of 1,000-1,250 m (Howard, 1991). Hills such as Dangala, Namusa, Ntunda, Wankobe and many others all rise to about 1340 meters above sea level, the highest being Najjembe Hill at 1356 meters a.s.l. The scenery is that of a gentle slope towards the north where the isolated hills like Namukupa rise to 1070 meters a.s.l. The flat-topped hills that occur all over southern Buganda Kingdom are remnants of the earlier peneplain uplifted by tectonic movements which lowered the land south of Mabira and was filled up by river water from the east and west to form present Lake Victoria (Pallister, 1957).

Mabira CFR has ferrallitic soils which are the final stage of tropical weathering. They are referred to as Buganda catena and consist of red soil of incipient laterisation on slopes and black clays in the valley bottoms often overlain by a few centimetres of peat produced by rotting swamp vegetation. According to Cheney (1960), the soils of Buganda catena are not characterized by the parent rocks but by the topography.

This IPA receives an equatorial climate characterised by a bimodal pattern of rainfall with two wet seasons i.e. March-May and September-November. The mean annual rainfall is 1300mm which is generally well distributed throughout the year. The general climate of the zone typically displays comparatively small seasonal variations of temperature, humidity and wind throughout the year. There is a dry season between late December and early March and another short one from June to July but both are frequently broken by thunderstorms. Much of the rainfall comes in the April-May season, the amount received being between 1375 mm and 1524 mm annually with the highest falls occurring in the southern part of the IPA. The annual mean minimum and maximum temperatures range between 16°C to 17°C and 28°C to 29°C, respectively.

Conservation issues

Mabira CFR was established under the Buganda Agreement in 1900 and first gazetted under Legal notice (LN) No. 87 of 1932. This site is also recognised as an Important Bird Area, triggered by species such as Nahan's partridge (Ptilopachus nahani) (VU), and a Key Biodiversity Area (KBA). Recognised trigger species for this include two plant species, Balsamocitrus dawei and Vepris eggelingii (Plumptre 2019).

Large sections of Mabira over the years experienced varying levels of human incursion on the forest estate for cultivation. However, significant portions of the previously encroached forests have since been reclaimed and some restoration action taken place, and in some sections, natural regeneration is now observed (MWE 2017, Olupot 2022). Mabira CFR has 27 populated enclaves within its boundaries (Davenport et al. 1996; Baranga 2007), where subsistence farming is the primary activity for over 3,500 families within. The most commonly grown crops are maize, cassava, bananas, sugarcane and beans. Illegal activities within the forest are common and include charcoal burning, pit sawing and collection of poles for construction as well as collecting medicinal plants mainly for their local use (Weldemariam et al. 2017). In addition, the IPA is flanked particularly on the southern and eastern sides, by tea and sugar plantations and factories (Welch, 2004).

In 1994-1997 Mabira CFR was divided into Management zones consisting of Strict Nature reserve, recreation/eco-tourism zone, zone for low-impact use, and a production zone (Davenport et al. 1996). The Strict Nature Reserve is located almost in the centre of the forest and was set aside mainly for species and habitat protection. The only activities allowed in this management zone are education and research with extraction limited to only meet the requirements of these two activities. The Recreational/Buffer Zone/eco-tourism zone surrounds the strict nature reserve and is meant to offer protection from undue human pressure from the outside. Allowed in this zone are ecotourism and harvesting of local herbs by inhabitants from surrounding communities. This zone was established within the Forest department as a tourism development project. The low-impact use zone occurs outside the buffer and on average appears to be the largest. Local inhabitants are allowed to collect firewood and medicine from this zone. The production zone occurs within the zone of low-impact use and is part of the overall forest management programme. In this zone, silvicultural practices are used to enrich stands for extractive use by private companies while other activities include enrichment planting of trees and salvage operations (MWE, 2009 and Kizza et al. 2013 cited in MWE 2017). In reality, illegal activities permeate all those zones, including the nature reserve (Sande et al. 2020).

The IPA is faced with multiple threats such as agricultural encroachment, population pressure, illegal acquisition of land titles in the forest/land grabbing, infrastructural development e.g. roads, power lines, dams, industries, etc.; political interference; inadequate funding; hostilities of some communities; and uncontrolled brick

making and sand mining. Others are unclear forest boundaries, urbanization, industrialization and uprooting planted trees (NFA 2017) and illegal hunting (Sande et al. 2020). The formerly encroached parts of the forest have been colonized by Broussonetia papyrifera (Paper mulberry). Native tree recovery in these areas is greatly hampered by illegal charcoal production and wood offtake (Olupot 2022, Olupot and Isabirye-Basuta 2022). Other threats include the primarily human-aided spread of the invasive shade-tolerant exotic tree, the Jack fruit Artocarpus heterophyllus (Kalema et al. 2022, Olupot and Isabirye-Basuta 2022) and the pollution of the Musamya River by effluent from the Lugazi sugar factory (Turinayo 2017).

In order to address these threats, the National Forestry Authority (2017) in the Revised Forest Management Plan for Mabira Central Forest Reserves (2010-2020) listed 151 prescriptions aimed at alleviating Environmental and social impacts. Other specific actions have been proposed, e.g. selective removal of mature mulberry trees in mulberry-pure stands (Olupot 2022), removal of Artocarpus heterophyllus (Kalema et al. 2022), direct seeding to restore populations of Citropsis articulata and Calamus deerratus (Olupot & Sande 2019), as well as uplifting the conservation status of the reserve to National Park (Sande et al. 2020).

Site assessor(s)

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Date of first assessment:
22nd Feb 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
Dasylepis eggelingii J.B.Gillett	A(i)	–	✓	✓	–	–	Frequent
Entandrophragma cylindricum (Sprague) Sprague	A(i)	–	✓	✓	–	✓	Occasional
Balsamocitrus dawei Stapf	A(i)	✓	✓	✓	–	✓	Occasional
Entandrophragma utile (Dawe & Sprague) Sprague	A(i)	–	✓	✓	–	✓	Frequent
Cnestis mildbraedii Gilg	A(i)	✓	✓	✓	–	–	Occasional
Hibiscus greenwayi Baker f.	A(i)	–	✓	✓	–	–	Unknown
Khaya anthotheca (Welw.) C.DC.	A(i)	–	✓	✓	–	✓	Occasional
Tricalysia bagshawei S.Moore subsp. bagshawei	A(i)	✓	✓	✓	–	–	Unknown
Rinorea tshingandaensis Taton	A(i)	✓	✓	✓	–	–	Occasional
Rinorea beniensis Engl.	A(i)	✓	✓	–	–	–	Occasional
Zanthoxylum mildbraedii (Engl.) P.G.Waterman	A(i)	✓	✓	✓	–	✓	Occasional
Vepris eggelingii (Kokwaro) Mziray	A(i)	✓	✓	✓	–	–	Occasional
Prunus africana (Hook.f.) Kalkman	A(i)	–	–	–	–	✓	Occasional
Sabicea entebbensis Wernham	A(i)	✓	✓	–	–	–	Unknown
Mimusops bagshawei S.Moore	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
Medium Altitude Semi-Deciduous Forest (EN)	C(iii)	✓	–	✓	242
Medium Altitude Evergreen Forest (VU)	C(iii)	–	–	–	3.5
Freshwater marshes (VU)	C(iii)	–	–	–	17
Dry Combretum wooded grassland (VU)	C(iii)	–	–	–	2.4

General site habitats

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

Land use types

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

Threats

THREAT	SEVERITY	TIMING
Residential & commercial development - Tourism & recreation areas	Low	Ongoing - stable
Agriculture & aquaculture - Annual & perennial non-timber crops - Small-holder farming	Medium	Ongoing - increasing
Transportation & service corridors - Roads & railroads	Medium	Ongoing - increasing
Transportation & service corridors - Utility & service lines	Low	Ongoing - increasing
Biological resource use - Logging & wood harvesting - Intentional use: large scale (species being assessed is the target) [harvest]	Medium	Ongoing - increasing

THREAT	SEVERITY	TIMING
Human intrusions & disturbance - Recreational activities	Medium	Ongoing - increasing
Agriculture & aquaculture - Livestock farming & ranching - Small-holder grazing, ranching or farming	Low	Ongoing - increasing
Invasive & other problematic species, genes & diseases - Invasive non-native/alien species/diseases - Unspecified species	High	Ongoing - increasing

Protected areas

PROTECTED AREA NAME	PROTECTED AREA TYPE	RELATIONSHIP WITH IPA	AREAL OVERLAP
Mabira Central Forest Reserve	Forest Reserve (conservation)	IPA encompasses protected/conservation area	289

Conservation designation

DESIGNATION NAME	PROTECTED AREA	RELATIONSHIP WITH IPA	AREAL OVERLAP
Mabira Forest Reserve	Key Biodiversity Area	IPA encompasses protected/conservation area	286
Mabira Forest Reserve	Important Bird Area	IPA encompasses protected/conservation area	286

Management type

MANAGEMENT TYPE	DESCRIPTION	YEAR STARTED	YEAR FINISHED
Protected Area management plan in place	Mabira Central Forest Reserves (Mabira, Nandagi, Namukupa, Namawanyi, Namananga & Kalagala Falls Central Forest Reserves)	2010	2020

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