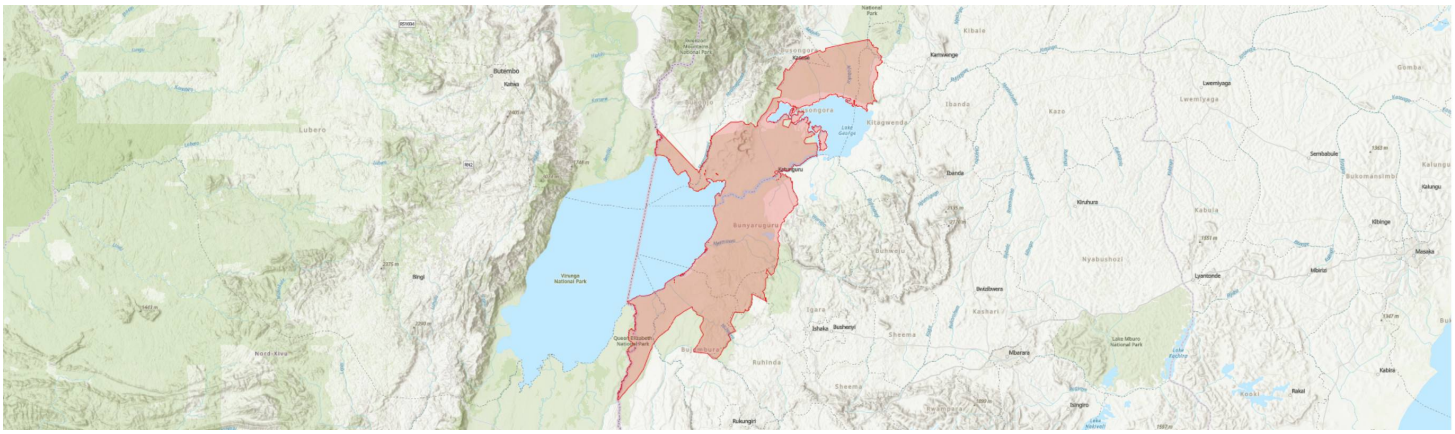
Queen Elizabeth-Maramagambo

UGATIPA25



Country: **Uganda**
Administrative region: **Western (Region)**
Central co-ordinates: **-0.35751 N, 29.92779 E**
Area: **2261km²**

Qualifying IPA criteria

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

IPA assessment rationale

Queen Elizabeth-Maramagambo qualifies as an IPA under criteria A(i) as it supports at least 12 globally threatened plant species, including one Critically Endangered, three Endangered and four Vulnerable species. QEM also holds 137 (13.2% of national total) useful plants species, ranking as the 7th most species-rich site in the network, and triggering criterion B(iii). Lastly, this IPA meets criterion C(iii), due to the presence of two nationally threatened habitat types: 51% of the national resource of the evergreen and semi-deciduous thicket (CR), comprising the best and most protected site nationally for this habitat; additionally, it is the best site nationally for freshwater marshes (VU), making up as 4.3% the national resource (Richards et al. 2024).

Site description

The Queen Elizabeth-Maramagambo (QEM) IPA comprises Queen Elizabeth National Park (QENP) and Maramagambo Central Forest Reserves (CFRs). The IPA covers a total area of 2,261.0 km2 and is located in the western arm of the East African Rift Valley, also known as the Albertine Rift, in western Uganda. It is situated across eight administrative districts: Kasese, Kitagwenda, Rubirizi, Mitooma, Kanungu, Kamwenge, Ibanda and Rukungiri. The QEM IPA forms the international boundary for a considerable part of its perimeter with the Democratic Republic of Congo (DRC). River Ishasha in the west is the natural boundary.
North Maramagambo CFR lies entirely within Queen Elizabeth National Park while South Maramagambo CFR lies within Kigezi Wildlife Reserve (Howard et al. 1996). The QEM IPA boundary therefore follows QENP with the addition of South Maramagambo CFR in the south. The QEM IPA is contiguous with the Parc National des Virunga in DRC. Together, these two completely encircle Lake Edward. Lake George is connected to Lake Edward by the Kazinga Channel and delineates part of the northeastern boundary of this IPA. Within this IPA are also several crater lakes, while the wetlands in the north of QENP have been designated as a Ramsar site (Lake George). QENP also neighbours Kyambura Wildlife Reserve, south of Lake George.

While much of QENP is dominated by low plant diversity savanna, there are important forest ecosystems within Maramagambo CFRs, with several threatened species, alongside botanically interesting thickets and wetlands along the Kazinga Channel and Lake George.

Botanical significance

The Queen Elizabeth-Maramagambo (QEM) IPA is a botanically important IPA, with at least 353 species of vascular plants recorded from QENP alone (Kalema 2005), and 414 species of trees and shrubs reported from North and South Maramagambo (Lwanga 1996). There is higher diversity in forest areas of the IPA than in savanna, and this may account for the difference in the two figures.

The QEM IPA has plant species of conservation significance, including ones that are threatened as well as others of a restricted range in their geographical distribution. The Critically Endangered Ugandan endemic Encephalartos whitelockii (Bösenberg 2024) occurs in QENP, albeit in a very narrow strip along the Mpanga River Gorge as most of the population, by far, is outside the park. The

globally Endangered Balsamocitrus dawei (Amani et al. 2022) is known to occur in South Maramagambo. This Ugandan endemic tree is known only from the western forests. Commelina zenkeri, also known from Maramagambo CFR) is globally Endangered (Lovell & Cheek 2020). This herbaceous species has a highly disjunct distribution, known from only four forests in Uganda, and is also native to Central and Eastern Cameroon, although may be extinct in the latter region of Cameroon (Lovell & Cheek 2020). Equilabium janthinothryx is restricted to Uganda (Mweya Peninsula in QENP) and DRC (EOO 9,331 km2), and assessed by as Endangered (Kalema 2024).

Pavetta bagshawei var. leucosphaera, a range-restricted and globally Vulnerable (Rotton et al. 2023) shrub or small tree, is only known from QENP and eastern DRC (POWO 2024). Globimetula kivuensis is globally Vulnerable (Gereau et al. 2019) and known from Queen Elizabeth National Park and North Maramagambo CFR. Aeglopsis eggelingii, a globally Vulnerable species (Amani et al. 2022), also occurs in Maramagambo (Lwanga 1996).
While Maramagambo CFRs hosts many of this IPAs threatened species, some are known from elsewhere in QEM. Brachystephanus coeruleus subsp. coeruleus, a globally Vulnerable species (Luke et al. 2015), is known from Bunyaruguru village, very close to the boundary of, and hence likely to occur in, Queen Elizabeth National Park.

Alongside several globally threatened species, QEM IPA also hosts nationally important areas of habitat. The site hosts over 50% of Uganda's evergreen and semi-deciduous thickets, a habitat assessed as Critically Endangered nationally (Richards et al. 2024). This habitat is predicted to have previously dominated much of the area between Lake Victoria and the Albertine Rift south of the Ruwenzori Mountains (Langdale-Brown et al. 1964; van Breugel et al. 2015), however, this has been almost completely transformed to agriculture. The protected areas of habitat within QENP, largely along the Kazinga Channel and Lake Edward shore, is therefore of great importance as the largest area of this habitat that remains nationally. This habitat is described as type (i) in the 'Habitat and geology' section.

Furthermore, the freshwater marsh north of Lake George is one of the best examples of this nationally Vulnerable habitat. Although this habitat is of low botanical diversity, dominated by Cyperus papyrus, it is highly important for the provision of ecosystem services (see Key ecosystem services). This IPA contains 4.3% of this important national resource (Richards et al. 2024).

QEM also contains a significant number of useful plants, totalling 137 species and comprising 13% of the national checklist (O'Sullivan et al. in press 2024). Significantly, 104 useful species found at this site are medicinal plants, including Vachellia hockii, Warburgia ugandensis and Capparis tomentosa. The site also holds 66 plants used for material (i.e.: building materials) these include Bridelia scleroneura and Borassus aethiopum.

Habitat and geology

The composition and structure of vegetation QEM IPA is quite diverse, largely influenced by climate, soils and human and animal activities. The rainfall in this IPA varies across the landscape, with the driest parts being in the savanna areas to the north and south of Lake Edward where average monthly rainfall is 30-40 mm (UWA in prep.). The savannas are, therefore, partially maintained by the limited rainfall at these sites and with increasing rainfall levels to the north and south of QENP, forest becomes the predominant vegetation type. The QEM IPA has two wet seasons during the months of March - May and August - November. The rest of the months are dry with the driest months being January, February and July. The total annual rainfall ranges between 500 – 1500 mm.

Langdale-Brown et al. (1964) recognized six broad vegetation categories: i) Moist thicket with Grewia, Vepris, Acacia (Senegalia) brevispica; ii) Grass savanna of Hyparrhenia filipendula; iii) Dry Acacia savanna with Cymbopogon and Themeda especially in the Ishasha sector and also in some of the crater lakes; iv) Communities on sites with impeded drainage supporting Acacia and Imperata; v) Cyperus papyrus swamp, especially around the shores of Lake George; vi) Cynometra-Celtis Forest which dominates the Maramgambo forests.

During the Pleistocene, QEM IPA was influenced by tectonic activity associated with the formation of the rift valley (UWA in prep.). Consequently, the area has a number of volcanic craters, some of which contain high levels of salt, including Lake Katwe and Bunyampaka. The IPA is dominated by high potassium volcanic deposits, rare carbonatite lava and alluvial rift soils including lacustrine deposits and alluvium in the north (Uganda Wildlife Authority 2024). These account for the rich savannah vegetation within the IPA.

Conservation issues

Lake George Game Reserve (689 km2) and Lake Edward Game Reserve (559 km2) were the first protected areas to be established in the area, in 1925 and 1930 respectively; South Maramagambo was established in 1932 (Howard 1991), while QENP was first established in 1952 and is now managed by UWA (UWA 2024).

The IPA encompasses most of Lake George Ramsar site which was designated in 1988. Queen Elizabeth National Park, together with Lake George, constitute an Important Bird Area - IBA (Byaruhanga et al. 2001). This site was subsequently designated a Key Biodiversity Area (KBA), on account of the presence of two globally Endangered species: Balsamocitrus dawei, and Loxodonta africana – the African Elephant - (Gobush et al. 2022). The area north of Lake George is a wetland of international importance and as such has been recognised as Ramsar site. This Ramsar Site covers an area of 150 km2 (Ramsar Sites Information Service 1988). QENP, the Maramgamabo CFRs, Kigezi WR, Kyambura WR and Lake George Ramsar site together form the Queen Elizabeth National Park

Biosphere Reserve, designated in 1983. This forms a large area in which the human-wildlife nexus consolidates the element of community relationships and interests in wildlife management areas. This helps to harmonise issues of access and utilisation of natural resources.

The QEM IPA forms part of the transboundary conservation landscape with the Virunga National Park of DRC which facilitates the cross-border migration for animal species. This attracts attention and interest in the integrity of the DRC ecosystems as spillover effects can affect conservation programmes in the IPA.

Despite falling within several protected areas, there are many threats to QEM IPA. Invasive plant species such as Lantana camara, Mimosa pigra, and Parthenium hysterophorus occur in this IPA. There are also introduced species such as Cascabela thevetia (Syn: Thevetia peruviana), Opuntia vulgaris and Catharanthus roseus. A few native species are problematic and these include Dichrostachys cinerea, Imperata cylindrica, Pistia stratiotes and Cymbopogon nardus. The invasive species have altered species composition, vegetation structure, reducing suitable habitat for animals, and the visibility of game for tourism activity. They also have the potential to reduce species diversity, thus reducing ecosystem health and integrity. The areas around Kikorongo, Mweya Peninsula, along the Kazinga channel and Channel Track, and Ishasha Sector, are particularly altered by D. cinerea and P. hysterophorus (pers. observ. Kalema 2024).

There are twelve fishing enclaves in the IPA (UWA 2024). The fishing community poses a threat to some of the resources, such as trees by cutting them for fuel wood to smoke the fish but also for domestic use. The areas surrounding Kazinga Channel and the two lakes Edward and George are particularly affected. Overfishing, illegal grazing, burning of vegetation and hunting of wild animals sometimes do occur.

The Ramsar site is also threatened by pollution upstream of Lake George from the stockpiled copper tailings (finely ground waste rock, left after copper extraction) from the Kilembe copper mines and the inflow of agricultural chemicals into the wetland resulting from the Mubuku Irrigation Scheme. This is manifested through its inclusion in the Montreux Record of Ramsar Sites Under Threat (Ramsar Sites Information Service 1988, Byaruhanga et al. 2001). There is also mining of limestone in the Dura Sector of Queen Elizabeth National Park by Hima Cement (U) Ltd, and this has been going on since 2006, causing destruction and degradation of ecologically sensitive habitats in the park, including the rivers Dura and Rwankerebe, and riverine ecosystems. These threats to wetland areas may particularly harm the ecological integrity of the nationally threatened freshwater marshes, of which Lake George Ramsar site is one of the best examples nationally.

A number of triggers exist for human-wildlife conflicts with communities surrounding this IPA. The key ones are problem animals that damage crops and injure or kill livestock; encroachment on the protected areas; illegal access and utilisation of resources e.g. by poaching, grazing, and tree cutting. In a few areas, the boundary of the protected area is not clearly marked.

Wildfires are set in this IPA at the beginning of dry seasons to encourage growth of young green and fresh vegetation that can attract wild animals to the park periphery for easy trapping by poachers. Management of the QENP also practices prescribed burning as a management tool to avoid fuel accumulation which leads to hot wildfires that would devastate the vegetation. South Maramagambo is reported to occasionally be affected by illegal mechanical tree harvesting as well as pit-sawing and charcoal burning (WWF and ACCU 2016). The high-quality and durable timber species Parinari excelsa is particularly targeted for harvesting by pit sawyers, yet it was reported not to be regenerating well in the forest (Howard 1991). Other species vulnerable to felling are Entandrophragma angolense, E. excelsum, Lovoa swynnertonii and L. trichilioides. There is also some encroachment on the Maramagambo forest, harvesting of medicinal herbs, gold mining, and harvesting of walking sticks, hoe handles, and banana supports (WWF & ACCU 2016).

One of the Focus Areas for management in this IPA by Uganda Wildlife Authority is Ecosystem Management. Under this, they are making an effort to control invasive and exotic species using manual means. They are also endeavouring to restore habitats degraded through encroachment and other illegal activities (UWA 2024). Through the Community Conservation Focus Area, UWA is sensitizing people about the value of protecting habitats for sustainable livelihoods. They are also initiating income-generating projects for communities to reduce their dependence on resources in the IPA.

Site assessor(s)

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Date of first assessment:
10th Apr 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
Commelina zenkeri C.B.Clarke	A(i)	–	✓	✓	–	–	Unknown
Globimetula kivuensis (Balle) Wiens & Polhill	A(i)	✓	✓	✓	–	–	Unknown
Prunus africana (Hook.f.) Kalkman	A(i)	–	✓	–	–	✓	Occasional
Aeglopsis eggelingii M.Taylor	A(i)	✓	✓	✓	–	–	Occasional
Balsamocitrus dawei Stapf	A(i)	✓	✓	✓	–	✓	Scarce
Zanthoxylum mildbraedii (Engl.) P.G.Waterman	A(i)	✓	✓	✓	–	–	Occasional
Mimusops bagshawei S.Moore	A(i)	–	✓	–	–	✓	Occasional
Equilabium janthinothryx (Lebrun & L.Touss.) Mwany. & A.J.Paton	A(i)	✓	✓	✓	–	–	Unknown
Pavetta bagshawei S.Moore var. leucosphaera (Bremek.) Bridson	A(i)	✓	✓	✓	–	–	Scarce
Brachystephanus coeruleus S.Moore subsp. coeruleus	A(i)	✓	✓	✓	–	–	Unknown
Encephalartos whitelockii P.J.H.Hurter	A(i)	✓	✓	✓	✓	✓	Frequent
Afroligusticum elliotii (Engl.) C.Norman	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
Evergreen and semi-deciduous bushland and thicket (EN)	C(iii)	✓	✓	✓	442
Freshwater marshes (VU)	C(iii)	–	–	✓	201

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)	✓	✓	✓	468
Medium Altitude Evergreen Forest (VU)	C(iii)	–	–	–	21
Dry Combretum wooded grassland (VU)	C(iii)	–	–	–	18

General site habitats

GENERAL SITE HABITAT	PERCENT COVERAGE	IMPORTANCE
Forest - Subtropical/Tropical Moist Lowland Forest	20	Major
Savanna - Dry Savanna	40	Major
Grassland - Subtropical/Tropical Dry Lowland Grassland	15	Major
Grassland - Subtropical/Tropical Seasonally Wet/Flooded Lowland Grassland	–	Minor
Wetlands (inland) - Permanent Rivers, Streams, Creeks [includes waterfalls]	–	Minor
Wetlands (inland) - Seasonal/Intermittent/Irregular Rivers, Streams, Creeks	–	Minor
Wetlands (inland) - Permanent Freshwater Lakes [over 8 ha]	–	Major
Wetlands (inland) - Permanent Freshwater Marshes/Pools [under 8 ha]	10	Major
Wetlands (inland) - Seasonal/Intermittent Freshwater Marshes/Pools [under 8 ha]	–	Minor
Rocky Areas - Rocky Areas [e.g. inland cliffs, mountain peaks]	–	Minor
Caves and Subterranean Habitats (non-aquatic) - Caves	–	Minor

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Nature conservation	100	Major
Tourism / Recreation	40	Major
Harvesting of wild resources	15	Minor

Threats

THREAT	SEVERITY	TIMING
Residential & commercial development - Tourism & recreation areas	Low	Ongoing - stable
Agriculture & aquaculture - Livestock farming & ranching - Nomadic grazing	Low	Ongoing - increasing
Energy production & mining - Mining & quarrying	Medium	Ongoing - stable
Transportation & service corridors - Roads & railroads	Medium	Ongoing - stable

THREAT	SEVERITY	TIMING
Transportation & service corridors - Utility & service lines	Low	Ongoing - stable
Biological resource use - Hunting & collecting terrestrial animals	Medium	Ongoing - increasing
Biological resource use - Gathering terrestrial plants	Low	Ongoing - increasing
Biological resource use - Logging & wood harvesting	Low	Ongoing - stable
Biological resource use - Fishing & harvesting aquatic resources	Medium	Ongoing - increasing
Human intrusions & disturbance - Recreational activities	Low	Ongoing - increasing
Natural system modifications - Fire & fire suppression	Medium	Ongoing - stable
Invasive & other problematic species, genes & diseases - Invasive non-native/alien species/diseases	High	Ongoing - increasing
Invasive & other problematic species, genes & diseases - Problematic native species/diseases	Low	Ongoing - stable
Pollution - Domestic & urban waste water	Low	Ongoing - increasing
Pollution - Industrial & military effluents	Medium	Ongoing - increasing

Protected areas

PROTECTED AREA NAME	PROTECTED AREA TYPE	RELATIONSHIP WITH IPA	AREAL OVERLAP
Kigezi	Wildlife Reserve	protected/conservation area overlaps with IPA	145
Kilanzu	Wildlife Reserve	protected/conservation area overlaps with IPA	2
Kazinga	Ramsar site	protected/conservation area overlaps with IPA	16
Kibale	National Park	protected/conservation area overlaps with IPA	2
Lake George	Ramsar site	protected/conservation area encompasses IPA	460
Queen Elizabeth National Park	UNESCO Biosphere Reserve	protected/conservation area encompasses IPA	2244
Queen Elizabeth	National Park	IPA encompasses protected/conservation area	2244
North Maramagambo	Forest Reserve (conservation)	IPA encompasses protected/conservation area	295
South Maramagambo	Forest Reserve (conservation)	IPA encompasses protected/conservation area	148

Conservation designation

DESIGNATION NAME	PROTECTED AREA	RELATIONSHIP WITH IPA	AREAL OVERLAP
Queen Elizabeth National Park and Lake George	Important Bird Area	protected/conservation area overlaps with IPA	2183

DESIGNATION NAME	PROTECTED AREA	RELATIONSHIP WITH IPA	AREAL OVERLAP
Queen Elizabeth National Park (including Kigezi Wildlife Reserve)	Key Biodiversity Area	protected/conservation area overlaps with IPA	2183
Mpanga Falls	Key Biodiversity Area	protected/conservation area overlaps with IPA	1
Kibale National Park	Key Biodiversity Area	protected/conservation area overlaps with IPA	7
Kyambura Wildlife Reserve	Key Biodiversity Area	protected/conservation area overlaps with IPA	2

Management type

MANAGEMENT TYPE	DESCRIPTION	YEAR STARTED	YEAR FINISHED
Site management plan in place	General Management Plan	2023	2033

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