

# Tororo Rock

## UGATIPA4

Country: **Uganda**

Administrative region: **Eastern (Region)**

Central co-ordinates: **0.68518 N, 34.18311 E**

Area: **0.39km<sup>2</sup>**

### Qualifying IPA criteria

A(i)

### IPA assessment rationale

Tororo Rock qualifies as an IPA under criterion A(i) as it contains a major portion of the global population of *Aloe tororoana*, a species currently assessed on the IUCN Red List as Vulnerable.

### Site description

Tororo Rock is a prominent volcanic peak situated within Tororo District of Eastern Region, Uganda, within 10 km of the Kenya border. It falls within the Tororo municipality, rising precipitously ca. 280 m above the surrounding town to a maximum height of 1,428 m. The slopes of the mountain support intact bushland, and extensive areas of exposed rock with a lithophytic flora on the steeper slopes.

### Botanical significance

Tororo Rock is of global botanical importance for holding the largest and most secure population of the Ugandan endemic aloe, *Aloe tororoana*. Here, *A. tororoana* grows plentifully on steep and often inaccessible slopes and cliffs in areas without dense vegetation (Carter et al. 2011; Andima et al. 2014; Cole & Forrest 2017). It is currently assessed on the IUCN Red List as Vulnerable under criterion D2 (IUCN SSC East African Plants Red List Authority 2013), but given ongoing threats to some of its subpopulations, this assessment should be upgraded to Endangered under criterion B. Away from Tororo Rock, it is known only from the Osukuru (Sukulu) Hills to the southwest of Tororo, which are subject to ongoing and planned industrial activity through the Osukuru Industrial Complex, including phosphorite and iron ore deposits. A record of this species from the Toror Hills in the Northern Region of Uganda (based on H.C. Dawkins #636, MO), mentioned in the Red List assessment, is believed to be in error as this site is a long way out of the range for this species.

### Habitat and geology

Tororo Rock is a volcanic plug comprising carbonatite (high-carbonate alkaline igneous rock) of Middle Eocene age (ca. 40 Ma), as an intrusion within Pre-Cambrian syenites (Williams 1952; HiTech AlkCarb 2022). Other, lower lying carbonatite outcrops occur immediately to the south of the rock, but these are not included in the IPA because they have been extensively denuded of vegetation. Tororo Rock is surrounded by urban development, but as the slopes steepen, natural bushland vegetation remains intact. On the steeper slopes there are areas of bare rock with pockets of shallow soil that support a succulent flora including *Aloe tororoana* and *Euphorbia magnicapsula*, both plentiful here.

Tororo experiences a humid climate, with average annual rainfall of over 2,000 mm. The main wet season peaks in April and May, with a shorter wet season in November-December; minimum rainfall months are February and July.

### Conservation issues

Tororo Rock is included in Uganda's Key Biodiversity Areas network based on the population of *Aloe tororoana* (Plumptre et al. 2017). However, this site is not formally protected at present and it faces a number of threats, in part driven by its proximity to Tororo town. Encroachment for settlement and agriculture, cattle grazing, uncontrolled burning and harvesting of firewood and poles continue to degrade the vegetation, particularly on the lower slopes (P. Nyadoi, pers. comm. 2022). Past extraction of the carbonatite rock for local construction and roadbuilding has occurred but community protests led to this being halted (IUCN SSC East African Plants Red List Authority 2013). However, the lower-lying extrusions of carbonatite immediately to the south of Tororo Rock, outside of the IPA boundary, are mined for cement. The erection of a series of telecommunication masts at the summit of the rock with associated power lines resulted in localised clearance of vegetation (IUCN SSC East African Plants Red List Authority 2013). Tourist footfall at the site is significant, with ladders having been erected to allow easy access to the summit, but the tourist route is clearly defined and most of the populations of the *Aloe* are on inaccessible parts of the cliff. Rock climbing by mountaineers may, however, cause some erosion of the species' fragile habitats. There are also some concerns over unsustainable harvesting of the *Aloe* for its medicinal uses (see Key Ecosystem Services below).

Between 2014 and 2018, Uganda Wildlife Society implemented a conservation initiative at this site which included replanting of some indigenous species and collaborating with Tororo District council

and local communities to promote the protection of the fragile habitats and to develop an ordinance for the site. However, the funded project ended before completion of the ordinance, and some recommendations were not implemented, including the formal demarcation of the site boundary (P. Nyadoi, pers. comm. 2022).

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### **Site assessor(s)**

Iain Darbyshire, Royal Botanic Gardens, Kew

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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
<i>Aloe tororoana</i> <i>Reynolds</i>	A(i)	✓	✓	✓	—	✓	Frequent

## 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
Shrubland - Subtropical/Tropical Moist Shrubland	—	Major
Rocky Areas - Rocky Areas [e.g. inland cliffs, mountain peaks]	—	Major

## Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Agriculture (arable)	—	Minor
Agriculture (pastoral)	—	Minor
Tourism / Recreation	—	Major
Residential / urban development	—	Minor
Harvesting of wild resources	—	Minor
Utility & service lines	—	Minor

## Threats

THREAT	SEVERITY	TIMING
Energy production & mining - Mining & quarrying	Medium	Past, not likely to return
Transportation & service corridors - Utility & service lines	Low	Ongoing - stable
Residential & commercial development - Tourism & recreation areas	Low	Ongoing - trend unknown
Human intrusions & disturbance - Recreational activities	Medium	Ongoing - trend unknown
Agriculture & aquaculture - Annual & perennial non-timber crops - Small-holder farming	Low	Ongoing - trend unknown

THREAT	SEVERITY	TIMING
Agriculture & aquaculture - Livestock farming & ranching - Small-holder grazing, ranching or farming	Low	Ongoing - trend unknown
Natural system modifications - Fire & fire suppression - Increase in fire frequency/intensity	Unknown	Ongoing - trend unknown
Biological resource use - Gathering terrestrial plants	Medium	Ongoing - trend unknown

## Conservation designation

DESIGNATION NAME	PROTECTED AREA	RELATIONSHIP WITH IPA	AREAL OVERLAP
Tororo Rock	Key Biodiversity Area	protected/conservation area overlaps with IPA	—

## Management type

MANAGEMENT TYPE	DESCRIPTION	YEAR STARTED	YEAR FINISHED
No management plan in place		—	—

## Bibliography

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