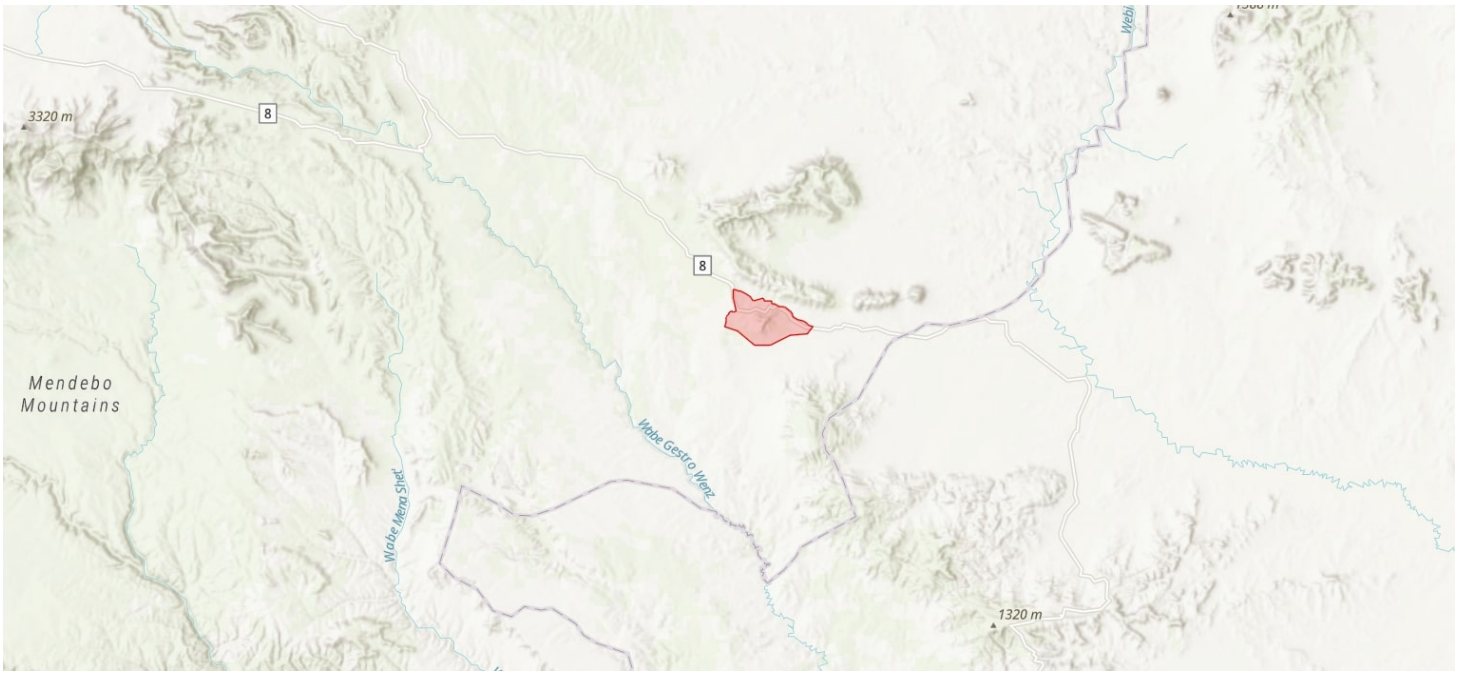
Lele Hills

ETHTIPA0014



Country: **Ethiopia**
Administrative region: **Oromia (Regional State)**
Central co-ordinates: **6.58436 N, 41.51425 E**
Area: **112km²**

Qualifying IPA criteria

A(i)

IPA assessment rationale

The Lele Hills qualify as an IPA under criterion A(i) as it contains the only known populations of three globally threatened plants: Commicarpus leleensis (VU), C. macrothamnus (VU) and Leucas gypsicola (CR).

Site description

The Lele Hills are situated within in the Rayitu Woreda, Bale Zone, in the Oromia National Regional State of Ethiopia, and are bissected by the Robe/Imi Road (B90). This IPA occurs within the Bale floristic region in the southeast of the country. The Lele Hills rise above the surrounding lowlands at ca. 750 m asl to a maximum height of 1,1672 m, lying and approximately 4 km to the south of the Audo Mountain Range. The slopes of the hills support intact Acacia-Commiphora bushland and the entire known range of three species of endemic gypsophytic plants. This region is one of the least botanically explored in Ethiopia, therefore more study of the surrounding gypsum outcrops is needed to determine their florisitic similarity of these sites to the Lele Hills (Friis et al. 2016; Paton et al. 2018).

As this area has not been well studied, these IPA boundaries are provisional. This IPA is in very close proximity to the Gerire Hills IPA. They have been designated as two separate units based on available information about the unique species assemblage and geology present at each site.

Botanical significance

The Lele Hills are of global botanical importance for holding the only known populations of three endemic plants: Leucas gypsicola, Commicarpus leleenis and C. macrothamnus (Paton et al. 2018, Friis et al. 2016). Each of these species is known from only a few localities and herbarium specimens within this IPA. While these species may occur on other gypsum outcrops in the vicinity, further study is needed to determine the floristric affinity of those sites to the Lele Hills. Suitable habitat for C. leleensis and C. macrothamnus has been modelled to occur outside of this IPA, however fieldwork is required to verify these results (Friis et al. 2016). Additionally, the extensive, remote, and almost unexplored gypsum hills northeast of the village named Chelchel need to be studied for their floristic affinity (Paton et al., 2018). The extinction risk these endemics species face has been assessed in draft and will be published on the IUCN Red List shortly: C. leleensis and C. macrothamnus have been

assessed as globally threatened (VU), while L. gypsicola has been assessed as Critically Endangered (CR). It is possible that other species of conservation concern will be identified at this site through more exhaustive botanical surveys.

The southeastern portion of Ethiopia is under botanically under-collected and continuing instability in the region has hindered any recent attempts to address this knowledge gap. If fieldwork activities was able to be undertaken on the gypsum outcrops in southeast Ethiopia, there is high potential for other species new to science to be found (M. Gilbert, pers. comm., 2023) and for the known ranges of species to be expanded (Friis et al., 2016).

Habitat and geology

The Lele Hills IPA is characterised by Acacia-Commiphora bushland (Friis at al., 2010; Friis et al., 2016; Paton et al., 2018). The gypsum outcrops at the site support a distinctive form of this bushland, with a tree stratum dominated by Commiphora guidotti and a sparse ground layer mostly devoid of herbs, while the vegetation on the red sand and clay in the plains surrounding the Lele Hills supports more typical Acacia-Commiphora bushland (Friis et al. 2016). For more information about co-dominant species, refer to the following habitat descriptions (Friis et al., 2016).

The Lele Hills consist of hard layers of gypsum and anhydrite intercalated with softer layers of shale and thin layers of dolomites (Friis et al., 2016; Mège et al., 2015). This geological unit is part of the Gorrahei Formation, an evaporite rock deposited during the late Cretaceous (Mège et al., 2015). The soil is mapped broadly as leptosols, which are thin and contain gravel (SoilGrids, 2023).

Conservation issues

Despite the high endemicity of plant species in southeastern Ethiopia, this region is under-represented in the protected area network. Currently the Lele Hills IPA is not formally protected.

Insufficient data on the flora of southeastern Ethiopia is inhibiting effective conservation of Ethiopia’s unique and rich plant diversity. In particular, there is a paucity of botanical data in SE Ethiopia where this IPA occurs.

The Robe/Imi Road which dissects the northern portion of the IPA was built recently. Since the construction of the road, heightened development activity in the vicinity of the road has been observed via satellite imagery (Google Earth Pro, 2023). This road access may facilitate further development in the Lele Hills area which is of particular concern as the collecting localities for the species of concearn at the Lele Hills are near the road (Friis et al., 2016).

There is evidence that the Lele Hills IPA is at some risk of grazing pressure. The area is occasionally visited by herdsmen grazing cattle, goats, sheep and camels, all of which are known to eat Commiphora spp. (Friis et al., 2016). Prior to 2016, reservoirs for gathering rain water were being established at a new village called Beredimtu and in uninhabited areas east of the Lele Hills, creating the possibility for more intense grazing and possibly human settlements (Friis et al., 2016). Land clearing for smallholder agriculture is prevalent throughout Ethiopia, however the risk to this area is minimal as gypsum substrates are not favoured for agricultural activity.

Due to the high amount of gypsum present at the site, this area may be a potential site of future development for gypsum mining. Gypsum is primarily extracted by surface mining, which is inevitably a destructive process for the vegetation cover on the gypsum deposit. There is currently some gypsum mining activity within the Oromia Regional State (Plaza-Toledo, 2018; Wakgari, 2021).

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
Leucas gypsicola A.J.Paton, Friis & Sebsebe	A(i)	✓	✓	✓	✓	–	Scarce
Commicarpus leleensis Friis & Sebsebe	A(i)	✓	✓	✓	✓	–	Scarce
Commicarpus macrothamnus Friis & O.Weber	A(i)	✓	✓	✓	✓	–	Common

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
Savanna - Dry Savanna	–	
Shrubland - Subtropical/Tropical Dry Shrubland	–	
Rocky Areas	–	

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Agriculture (pastoral)	–	Minor

Threats

THREAT	SEVERITY	TIMING
Agriculture & aquaculture - Livestock farming & ranching - Nomadic grazing	Low	Ongoing - trend unknown
Human intrusions & disturbance	Low	Ongoing - trend unknown
Agriculture & aquaculture - Livestock farming & ranching - Nomadic grazing	Low	Ongoing - trend unknown

Management type

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

Bibliography

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