



BOWAL TANKON AND BOWAL TOUPPE MAMA, DALABA

ABSTRACT

Bowal Tankon and Bowal Touppé Mama are home to the last known global populations of *Vernonia djalonensis* and *Emilia djalonensis*, endemic species to the Fouta Djallon area of the Guinea highlands. Bowal Tankon is under immediate threat from construction and urbanisation. Three other Vulnerable species are also thought to be present: *Kotschyia lutea*, *Eriocaulon sessile*, *Indigofera megaephala*.

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TIPA Assessment: Bowal Tankon and Bowal Touppé Mama, Dalaba

IPA criteria under which the site qualifies: A (i), C (iii)

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IPA assessment rationale

Bowal Tankon and Bowal Touppé Mama are home to the last known global populations of *Vernonia djalonensis* and *Emilia djalonensis* (to be verified), endemic species to the Fouta Djallon area of the Guinea Highlands. Other historic sites have been searched at Mali and between Timbo and Ditinn, but neither species has been rediscovered in these places. Bowal Tankon is under immediate threat from construction and urbanisation. Based on historical records, three other Vulnerable (VU) species are also thought to be present: *Kotschyia lutea*, *Eriocaulon sessile*, and *Indigofera megacephala*.

Site overview

Site Name: Bowal Tankon and Bowal Touppé Mama	
Country: Republic of Guinea	Administrative region: Dalaba
Central co-ordinates: 10°39'31.8''N, 12°12'52.9''W	Area: 5 km ²
Altitude minimum: 1290 m	Altitude maximum: 1350 m

Site description

Bowal Tankon is southern part of the Diaguissa plateau which runs north east – south west across National Route 5. The plateau is made up of a solid outcrop of iron rich laterite covered by thin soils with some gravel and deeper soils upslope. In the wet season, there is a marsh area on the upper part of the plateau area. Due to it being alongside the road, housing has already sprung up and a new estate area has been marked out and lots assigned. The North West side of the plateau, Bowal Touppé Mama, has a less intact outcrop and has areas which are more gravelly and with deeper soils compared to Bowal Tankon. Both areas have some human influence either from construction, pastoralism or agriculture. The vegetation is typical of the bowal of high altitude and shares affinities with the iron-rich bowal found in the mountains of Guinée Forestière. Areas further north in the Fouta Djallon towards Labé and Pita are not iron rich and therefore have a different composition.



Map showing the proposed area for protection as a TIPA. Core area in red, buffer zone in yellow.

Botanical significance

The Diaguissa plateau is the only known surviving site globally for *Vernonia djalonensis* CR and *Emilia djalonensis* CR(PE). There have been recent field campaigns to verify other populations known from old collections, and to search areas that resemble the Diaguissa plateau on satellite imagery. However, these searches have unfortunately not yielded any new or extant populations.

The largest part of the population of *Vernonia djalonensis* is found on the lower slopes of Bowal Tankon with a sparser number found on Bowal Touppé Mama. *Emilia djalonensis* is known from one Chevalier collection on the Diaguissa plateau of which this is a part. There have been no recent collections of this species. The lower slope of Bowal Tankon is populated with other common bowal species; upslope where there is a temporary marsh in the wet season, there is a large population of *Kotschya micrantha*, one of only 5 sites known in the Fouta Djallon. On Bowal Touppé Mama, a small sparse population of *Mesanthemum tuberosum* (VU) has been recorded. Three other vulnerable species, *Kotschya lutea*, *Eriocaulon sessile* and *Indigofera megacephala* have also been recorded from this area. It is conceivable that they are still present, however it is unlikely that *Kotschya lutea* is still extant here as this species is very distinct and has not been found despite active searching during surveys. It could therefore be locally extinct.

General habitat and geology description

Ferralitic hard pan (impervious). Bowal grassland on a continuous outcrop of concretised iron pan with very thin soils. Different to other bowé in the area as there is very little gravel present.

Conservation issues

Major current threats are from 1) Housing (urbanisation): this area has already been marked out for building plots and most plots have been sold (*Pers. Comm.* Mayor of Dalaba, July 2017). 2) Chinese gravel crushing plant installed after Nov. 2016. Much of the upper slope of Bowal Tankon has been cleared for installation and there was evidence of rubbish burning outside the plant in July 2017 (*Pers. Obs.* C. Couch).

Protected area status and Management

This area is currently unprotected. It shares governance between the local Mayors office and the state.

Threats

Urbanisation: A housing estate that is likely to cover up to 90% of the population of *Vernonia djalonensis*

Infrastructure: A gravel crushing plant covers a small part of the area.

Threat level: High

Criterion A: Threatened Species

Criterion A taxon present	IPA subcriterion	IUCN redlist assessment	Site contains...			Entire global population (single-site endemic)	Species is of socio-economic importance	*Abundance at site
			≥ 1% of global population	≥ 5% of national population	Is 1 of 5 best sites nationally			
<i>Vernonia djalonensis</i> A.Chev.	A(i)	CR	☉	☉	☉	☉	☉	Frequent
<i>Kotschy micrantha</i> (Harms) Hepper	A(i)	VU	☉	☉	☉			Infrequent
<i>Mesanthemum tuberosum</i> Lecomte	A(i)	VU	☉	☉	☉			Scarce
<i>Emilia djalonensis</i> Lisowski	A(i)	CR(PE)	☉	☉	☉	☉		Unknown
<i>Indigofera megacephala</i> J.B.Gillett	A(i)	VU	☉					Unknown
<i>Eriocaulon sessile</i> Meikle	A(i)	VU	☉					Unknown

Key: IUCN category: CR Critically Endangered, EN Endangered, VU Vulnerable. Abundance: Abundant, Common, Frequent, Infrequent, Scarce, Unknown

Criterion B: Botanical Richness

Insufficient data available

Criterion C: Threatened Habitat

*Habitat type	IPA subcriterion	IUCN redlist assessment	Site contains...		Estimated area at site (if known)
			≥ 5% of national resource (for C(i) and C(ii))	≥ 10% of national resource (for C(iii))	
High altitude ferralitic bowal	C(iii)		○○	⊙	5km ²

Bibliography

IUCN Red List of Threatened Species: www.redlist.org

Lisowski, S. 2009. Flore (Angiospermes) de la République de Guinée. Scripta Botanica Belgica.

Couch, C; Magassouba, S; Rokni, S; Cheek, M. (2018) Threatened plants species of Guinea-Conakry: A preliminary checklist. PeerJ Preprints. <https://doi.org/10.7287/peerj.preprints.3451v2>

Field Reports:

C Couch, Oct 2016. TIPAs Guinea Darwin Project report: Field expedition to Fouta Djallon

C Couch July 2017. TIPAs Guinea Darwin Project report: Field expedition to Fouta Djallon

A Balde, Oct. 2017. Rapport de terrain projet Darwin dans les préfectures de mali et Labé (Fouta Djallon) région administrative de Labé.

Site in pictures



Upper section of Bowal Tankon October 2016 with *Vernonia djalonensis* (Photo: C. Couch © RBG Kew)



Lower part of Bowal Tankon in October 2016 with *Vernonia djalonensis* (Photo: C. Couch © RBG Kew)



Evidence of construction at Bowal Tankon (Photo: C. Couch © RBG Kew)



Marsh area on upper plateau of Bowal Tankon (Photo: C. Couch © RBG Kew)



Bowal Tankon dry season, January 2018 (Photo: M. Cheek © RBG Kew)



Bowal Touppé Mama, October 2016 (Photo: C. Couch © RBG Kew)



Vernonia djalonensis in flower, October 2016 (Photo: C. Couch © RBG Kew)



Vernonia djalonensis in fruit, January 2018 (Photo: M. Cheek © RBG Kew)