



**TIPA ASSESSEMENT:
SIMBARAYA FERRALITIC BOWE, KINDIA
PREFECTURE**

ABSTRACT

Lowland ferrallitic bowal is a threatened habitat type in Guinea. It can support a high diversity of herbaceous species as well as threatened, rare species: *Nymphoides guineensis* in temporary pools. The Simbaraya bowé is a good example of this habitat type which is under threat in Guinea from mining, gravel extraction, overgrazing, and housing.

Charlotte Couch and Martin Cheek

TIPA Assessment: Simbaraya Ferrallitic Bowé, Kindia Prefecture.

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

Assessed by: Charlotte Couch and Martin Cheek (RBG Kew)

IPA assessment rationale

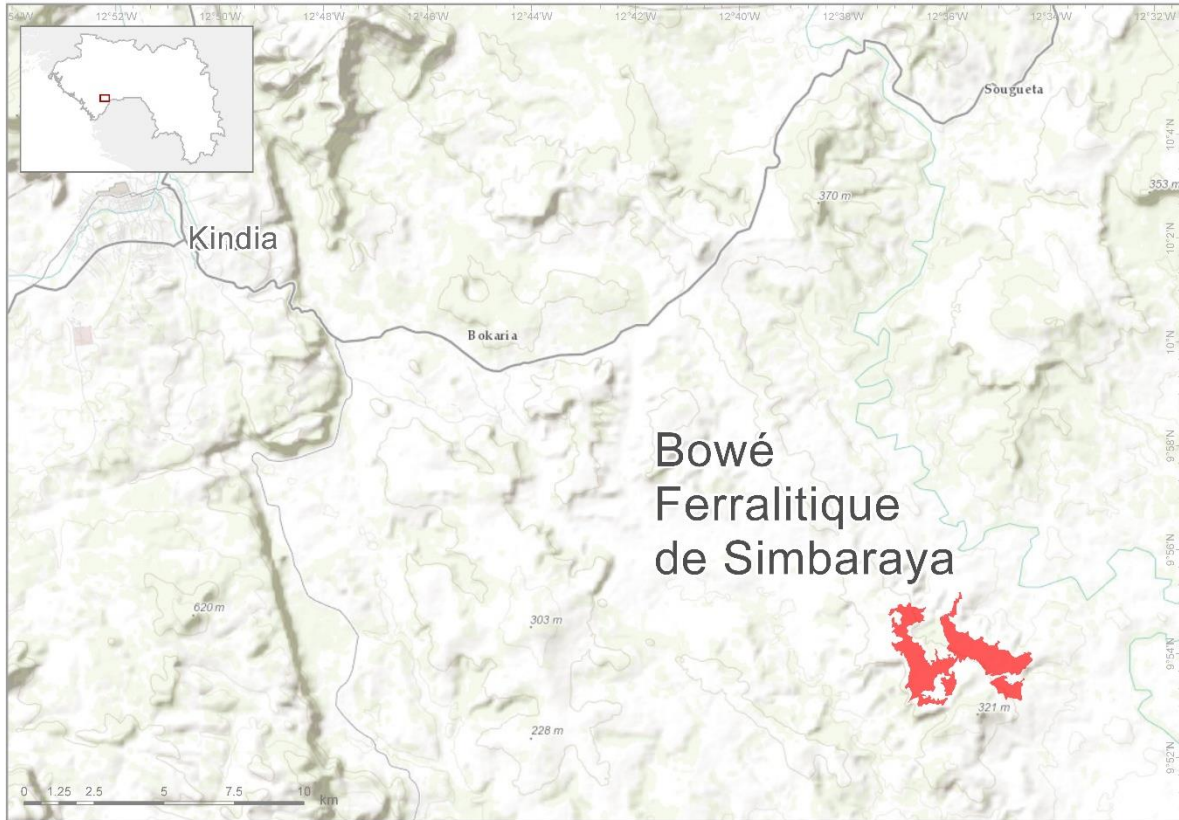
Lowland ferrallitic bowal is a threatened habitat type in Guinea. It can support a high diversity of herbaceous species as well as threatened, rare species: *Nymphoides guineensis* in temporary pools. The Simbaraya bowé is a good example of this habitat type which is under threat in Guinea from mining, gravel extraction, overgrazing, and housing.

Site overview

Site Name: Simbaraya Ferrallitic Bowé	
Country: Republic of Guinea	Administrative region: Yomou Prefecture
Central co-ordinates: 09°53'46''N, 12°36'05''W	Area: c. 7 km ²
Altitude minimum: 140 m	Altitude maximum: 220 m

Site Description

Ferrallitic ironstone bowal area south of the village of Simbaraya in Kindia Prefecture. It is located along the road leading south to Madina Oula (and Sierra Leone). The bowé are surrounded by wooded grassland and there are small wooded islands, temporary ponds and marshes within them.



Map showing the proposed area for protection as a TIPA. Core area shown in red.

Botanical significance

Ironstone bowal has a different species composition to bauxite or pure sandstone bowal, though has similar microhabitats present. The bowal at Simbaraya has small ponds with *Nymphoides guineensis*, grassland with depressions, and wooded islands. There is a species high diversity at this locality. Lowland ferrallitic bowal is a recognised Threatened Habitat type in Guinea and is under threat from mining activities, as the iron is close to the surface.

General habitat and geology description

The concretised iron pan is impermeable causing flooding in the rainy season and the formation of temporary marshes. The thin soils support grasses and herbs, either annual species or with tubers to survive the dry season.

Conservation issues

Currently no lowland lateritic (ferrallitic) bowal is protected in Guinea. This habitat is threatened by mining, gravel extraction and housing. There is also cattle grazing in the area and fires are set by pastoralist farmers for new grass shoots in the dry season.

Protected area status and Management

There is currently no protection for this area.

Threats

Gravel extraction	Gravel is extracted for building materials
Mineral extraction	Iron ore extraction
Fires	Set by cattle herders for their livestock
Housing expansion	Bowal is used for building houses as it is a solid base
Overgrazing	Cattle and other domestic animals

Threat level: **Medium**

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>Nymphoides guineensis</i> A. Raynal	A(i)	EN	⊙	⊙	⊙			Scarce
<i>Dilophotriche occidentalis</i> Jacq.-Fél.	A(i)	VU	⊙	⊙				Frequent

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

Criterion B: Botanical Richness

B(i) exceptional botanical richness within a defined habitat			B(ii): exceptional number of species of conservation importance - site recording table (from nationally agreed list)		B(iii): exceptional number of useful / culturally valuable species (from nationally agreed list)	
*Habitat code and name	Site is part of the top 10% of the national resource	Site is one of the 5 best sites nationally for that habitat	Site contains ≥ 3% of the species on the national list	Site is one of the 15 richest locations nationally	Site contains ≥ 3% of the species on the national list	Site is one of the 15 richest locations nationally
Low altitude ferralitic bowal	○	⊙	○	○	○	○

*Criterion B taxon present	Sub-criterion under which species qualifies	For B(i) – indicator of habitat	*Abundance at site
<i>Acroceras amplexans</i> Stapf	B(i)	Low altitude ferralitic bowal	
<i>Adelostigma senegalense</i> Benth.	B(i)	Low altitude ferralitic bowal	
<i>Aeollanthus pubescens</i> Benth.	B(i)	Low altitude ferralitic bowal	
<i>Aeschynomene americana</i> L.	B(i)	Low altitude ferralitic bowal	
<i>Afrotrilepis pilosus</i> (Boeck.) J.Raynal	B(i)	Low altitude ferralitic bowal	

<i>Alysicarpus rugosus</i> (Willd.) DC.	B(i)	Low altitude ferralitic bowal	
<i>Anadelphia leptocoma</i> (Trin.) Pilg.	B(i)	Low altitude ferralitic bowal	
<i>Anadelphia trispiculata</i> Stapf	B(i)	Low altitude ferralitic bowal	
<i>Andropogon chinensis</i> (Nees) Merr.	B(i)	Low altitude ferralitic bowal	
<i>Bryaspis lupulina</i> (Planch.) Duvign.	B(i)	Low altitude ferralitic bowal	
<i>Bulbostylis coleotricha</i> (A.Rich.) C.B.Clarke	B(i)	Low altitude ferralitic bowal	
<i>Caperonia serrata</i> (Turcz.) Presl	B(i)	Low altitude ferralitic bowal	
<i>Celosia argentea</i> Voss	B(i)	Low altitude ferralitic bowal	
<i>Celosia trigyna</i> L.	B(i)	Low altitude ferralitic bowal	
<i>Ceropegia deightonii</i> Hutch. & Dalziel	B(i)	Low altitude ferralitic bowal	
<i>Chamaecrista mimosoides</i> (L.) Greene	B(i)	Low altitude ferralitic bowal	
<i>Commelina nigritana</i> Benth.	B(i)	Low altitude ferralitic bowal	
<i>Crepidorhopalon gracilis</i> (Pilg.) Eb.Fisch.	B(i)	Low altitude ferralitic bowal	
<i>Crotalaria goreensis</i> Guill. & Perr.	B(i)	Low altitude ferralitic bowal	
<i>Cyanotis lanata</i> Benth.	B(i)	Low altitude ferralitic bowal	
<i>Cyclocarpa stellaris</i> Afzel. ex Baker	B(i)	Low altitude ferralitic bowal	
<i>Cyperus denudatus</i> var. <i>denudatus</i> L.f.	B(i)	Low altitude ferralitic bowal	
<i>Cyperus distans</i> L.f.	B(i)	Low altitude ferralitic bowal	
<i>Desmodium delicatulum</i> A.Rich.	B(i)	Low altitude ferralitic bowal	
<i>Desmodium velutinum</i> (Willd.) DC.	B(i)	Low altitude ferralitic bowal	
<i>Dilophotriche occidentalis</i> Jacq.-Fél.	B(i)	Low altitude ferralitic bowal	
<i>Dioscoreophyllum cumminsii</i> var. <i>cumminsii</i> (Stapf) Diels	B(i)	Low altitude ferralitic bowal	
<i>Dipcadi viride</i> (L.) Moench	B(i)	Low altitude ferralitic bowal	
<i>Diplacrum africanum</i> (Benth.) C.B.Clarke	B(i)	Low altitude ferralitic bowal	
<i>Dopatrium senegalense</i> Benth.	B(i)	Low altitude ferralitic bowal	
<i>Drosera indica</i> L.	B(i)	Low altitude ferralitic bowal	
<i>Elymandra subulata</i> Jacq.-Fél.	B(i)	Low altitude ferralitic bowal	
<i>Eriocaulon afzelianum</i> Wikstr. ex Körn	B(i)	Low altitude ferralitic bowal	
<i>Eriocaulon plumale</i> subsp. <i>plumale</i> N.E.Br.	B(i)	Low altitude ferralitic bowal	
<i>Eriosema glomeratum</i> (Guill. & Perr.) Hook.f.	B(i)	Low altitude ferralitic bowal	

<i>Euphorbia hyssopifolia</i> L.	B(i)	Low altitude ferralitic bowal	
<i>Floscopa axillaris</i> (Poir.) C.B.Clarke	B(i)	Low altitude ferralitic bowal	
<i>Fuirena umbellata</i> Rottb.	B(i)	Low altitude ferralitic bowal	
<i>Hibiscus squamosus</i> Hochr.	B(i)	Low altitude ferralitic bowal	
<i>Hydrolea macrosepala</i> A. W. Benn.	B(i)	Low altitude ferralitic bowal	
<i>Hyptis spicigera</i> Lam.	B(i)	Low altitude ferralitic bowal	
<i>Hyptis suaveolens</i> (L.) Poit.	B(i)	Low altitude ferralitic bowal	
<i>Indigofera capitata</i> Kotschy	B(i)	Low altitude ferralitic bowal	
<i>Indigofera simplicifolia</i> Dennst.	B(i)	Low altitude ferralitic bowal	
<i>Ipomoea eriocarpa</i> R.Br.	B(i)	Low altitude ferralitic bowal	
<i>Ischaemum rugosum</i> Salisb.	B(i)	Low altitude ferralitic bowal	
<i>Justicia ladanoides</i> Lam.	B(i)	Low altitude ferralitic bowal	
<i>Leersia drepanothrix</i> Stapf	B(i)	Low altitude ferralitic bowal	
<i>Limnophila barteri</i> Skan	B(i)	Low altitude ferralitic bowal	
<i>Limnophila dasyantha</i> (Engl. & Gilg) Skan	B(i)	Low altitude ferralitic bowal	
<i>Lindernia crustacea</i> (L.) F.Muell.	B(i)	Low altitude ferralitic bowal	
<i>Ludwigia hyssopifolia</i> (G.Don) Exell	B(i)	Low altitude ferralitic bowal	
<i>Mesanthemum radicans</i> (Benth.) Koern.	B(i)	Low altitude ferralitic bowal	
<i>Mollugo nudicaulis</i> Lam.	B(i)	Low altitude ferralitic bowal	
<i>Mukia maderaspatana</i> (L.) M.J.Roem.	B(i)	Low altitude ferralitic bowal	
<i>Nemum spadiceum</i> (Lam.) Desv.	B(i)	Low altitude ferralitic bowal	
<i>Nymphoides guineensis</i> A.Raynal	B(i)	Low altitude ferralitic bowal	
<i>Ocimum basilicum</i> L.	B(i)	Low altitude ferralitic bowal	
<i>Ocimum gratissimum</i> L.	B(i)	Low altitude ferralitic bowal	
<i>Oldenlandia herbacea</i> (L.) Roxb.	B(i)	Low altitude ferralitic bowal	
<i>Oryza longistaminata</i> A.Chev. & Roehr.	B(i)	Low altitude ferralitic bowal	
<i>Pandiaka angustifolia</i> (Vahl) Hepper	B(i)	Low altitude ferralitic bowal	
<i>Panicum cf. gracilicaule</i> Rendle	B(i)	Low altitude ferralitic bowal	
<i>Panicum pilgeri</i> Mez	B(i)	Low altitude ferralitic bowal	
<i>Parahyparrhenia annua</i> (Hack.) Clayton	B(i)	Low altitude ferralitic bowal	

<i>Parkia biglobosa</i> (Jacq.) R.Br. ex G. Don	B(i)	Low altitude ferralitic bowal	
<i>Pennisetum polystachion</i> (L.) Schult.	B(i)	Low altitude ferralitic bowal	
<i>Pycreus capillifolius</i> (A.Rich.) C.B.Clarke	B(i)	Low altitude ferralitic bowal	
<i>Raphionacme brownii</i> Scott-Elliot	B(i)	Low altitude ferralitic bowal	
<i>Rhynchospora triflora</i> Vahl	B(i)	Low altitude ferralitic bowal	
<i>Sacciolepis cymbiandra</i> Stapf	B(i)	Low altitude ferralitic bowal	
<i>Scleria sphaerocarpa</i> (E.A. Rob.) Napper	B(i)	Low altitude ferralitic bowal	
<i>Sesamum radiatum</i> Schum. & Thonn.	B(i)	Low altitude ferralitic bowal	
<i>Spermacoce filifolia</i> (Schum. & Thonn.) J.-P. Lebrun & Stork	B(i)	Low altitude ferralitic bowal	
<i>Spermacoce hepperiana</i> Verdc.	B(i)	Low altitude ferralitic bowal	
<i>Spermacoce ruelliae</i> DC.	B(i)	Low altitude ferralitic bowal	
<i>Spermacoce verticillata</i> L.	B(i)	Low altitude ferralitic bowal	
<i>Striga asiatica</i> (L.) Kuntze	B(i)	Low altitude ferralitic bowal	
<i>Tephrosia bracteolata</i> Guill. & Perr.	B(i)	Low altitude ferralitic bowal	
<i>Torenia thouarsii</i> (Cham. & Schlttdl.) Kuntze	B(i)	Low altitude ferralitic bowal	
<i>Urena lobata</i> L.	B(i)	Low altitude ferralitic bowal	
<i>Utricularia tortilis</i> Welw. ex Oliv.	B(i)	Low altitude ferralitic bowal	
<i>Vernonia cinerea</i> (L.) Less.	B(i)	Low altitude ferralitic bowal	
<i>Vigna filicaulis</i> Hepper	B(i)	Low altitude ferralitic bowal	
<i>Waltheria indica</i> L.	B(i)	Low altitude ferralitic bowal	
<i>Wissadula amplissima</i> var. <i>rostrata</i> (L.) R.E.Fr.	B(i)	Low altitude ferralitic bowal	

Key: Abundance: Abundant, Common, Frequent, Infrequent, Scarce, Unknown.

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))	
Low altitude ferralitic bowal	C(iii)		○	⊙	c.7km ²

Bibliography

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.3451v1>

IUCN Red List: www.iucnredlist.org accessed Dec 2018

Site in pictures



Simbaraya ferralitic bowal, November 2012 (Photo: ©M. Cheek, RBG Kew)



Cattle herders on the Simbaraya bowal, November 2012 (Photo: ©M. Cheek, RBG Kew)



Ephemeral flush vegetation, November 2012 (Photo: ©M.-H. Weech, RBG Kew)



Ephemeral flush vegetation, November 2012 (Photo: ©M.-H. Weech, RBG Kew)