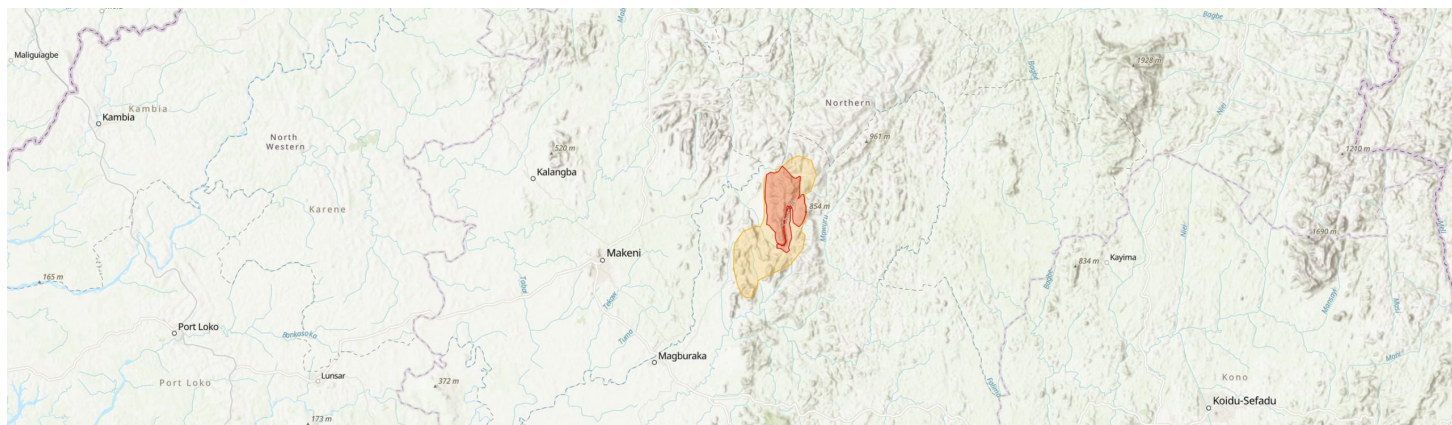


Farangbaya Forest Reserve and Tonkolili River

SIETIPA05



Country: **Sierra Leone**

Administrative region: **Northern (Province)**

Central co-ordinates: **8.97000 N, 11.73000 E**

Area: **223.2km²**

Qualifying IPA criteria

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

IPA assessment rationale

This site qualifies as an IPA as it contains globally significant populations of 53 threatened taxa that trigger criterion A(i). The IPA is one of the five best sites nationally for botanical richness and therefore falls under criterion B(i). It also has the presence of Sierra Leone's low evergreen forest, waterfalls with threatened species such as *Ledermanniella aloides* and one of the best sites for montane forest (the Sula Mountain) in Sierra Leone therefore falls in criterion C(i).

Site description

The Farangbaya Forest Reserve and Tonkolili River IPA is located in the southern Sula Mountains of the Northern Province of Sierra

Leone. The Farangbaya Forest Reserve is a range of steep hills of about 13 km long and arranged from north to south. The highest hill is 865 m high and has a communications mast that is only accessible on foot. The Tonkolili River flows from north to south along the eastern side of the Farangbaya hills, then circles around the southernmost hill and continues to the northwest.

Botanical significance

The Farangbaya Forest Reserve and Tonkolili River support globally significant populations of threatened and rare forest and riverine plant species. The gallery forest and riverbed of the Tonkolili River are rich in rare plant species. Two Critically Endangered species of *Eriocaulon* (Eriocaulaceae) were first described from collections made in the riverbed at this site: *Eriocaulon petraeum* and *Eriocaulon sulanum* (Phillips et al., 2012). *Eriocaulon petraeum* is endemic to the Sula Mountains, while *E. sulanum* was initially thought to be endemic but has since been recorded in Guinea. In total, two plant species endemic to Sierra Leone have been recorded at this site: *Eriocaulon petraeum* (CR) and *Millettia leonensis* (EN).

In the gallery forest along the Tonkolili River, several Endangered species were recorded: *Baphia spathacea*, *Cola angustifolia*, *Dactyladenia smeathmannii*, *Eremospatha dransfieldii*, *Gilbertiodendron tonkolili*, *Placodiscus pseudostipularis*, and *Sericanthe trilocularis* subsp. *paroissei*. *Paleodissotis leonensis* is

only known from Guinea and Sierra Leone and is listed as Endangered because it is not resistant to fire. *Paleodissotis leonensis* was found on a rocky slope near the Tonkolili River; the species may also occur on rocky slopes near the summits. *Napoleonaea alata* (EN) was collected in the forest. Several widespread but threatened timber species have been recorded at the site, including *Azelia africana*, *Cryptosepalum tetraphyllum*, *Copaifera salikounda*, *Entandrophragma cylindricum*, *Lophira alata*, *Ansellia africana* and *Terminalia ivorensis* (all listed as Vulnerable). The site also presents range-restricted Vulnerable species, for example *Anubias gracilis*, *Brachystegia leonensis*, *Dialium pobeguinii*, *Didelotia afzelii*, *Gilbertiodendron aylmeri*, *Guibourtia leonensis* and *Tessmannia baikiaeoides*. *Ansellia africana* VU, *Pavetta lasioclada* VU, *Baphia spathacea* EN, and *Nauclea diderrichii* NT, have only been recorded within this IPA site in the country though they might occur in other areas if more research is conducted.

Habitat and geology

Vegetation at the Farangbaya Forest Reserve and Tonkolili River includes riverine forest, along the steep and rocky banks of the Tonkolili River; a remnant of what was once more continuous forest. River channel communities support herbaceous species rooted in the riverbed, particularly in areas with rapids and waterfalls. In most areas the original forest has been replaced by farmland, fallow land, and secondary vegetation, though small patches of high-quality forest persist in culturally significant “society bushes” at the site. The different vegetation types within the area provide a habitat for rare and threatened plant species.

The IPA is located within the Tonkolili Formation, consisting of metasedimentary rocks, including banded iron formations that are extracted at the nearby Tonkolili Mine (Kingho Mining), one of the country’s major mining operations (Goodenough et al., 2018; GoSL, 2024).

Conservation issues

Mining activities at the Tonkolili iron ore mine, an active mining concession upstream and partly within the IPA (GoSL, 2024), is having significant impacts on habitats and plants at the site. Artisanal gold mining activities and farming are also having large impacts.

Rare aquatic herbs that are known to occur in the Tonkolili River, including rheophytic species such as members of the Eriocaulaceae family, are vulnerable to changes in water quality and flow regime caused by current mining activities. Satellite imagery indicates the presence of a dam where the IPA boundary meets the Tonkolili River, as well as significant sedimentation levels, which will adversely affect these sensitive species. Rheophytes, such as *Eriocaulon petraeum* and *E. sulanum*, rely on suitable water levels to trigger flowering and adequate high-water quality to

photosynthesize. Although these species have been translocated to nearby suitable habitats, ongoing monitoring is required to ensure their survival at the IPA and translocation sites. Water pollution from mining activities poses a significant threat to the survival of the threatened plant species recorded at the site (van der Burgt et al., unpublished report, 2016).

The forest within the southern Sula Mountains, once only interrupted by a few grassland patches, has been extensively degraded through slash-and-burn agriculture, leaving only a narrow strip of forest along the steep and rocky banks of rivers and streams, including the Tonkolili River. This remnant forest, rich in rare plant species, remains under threat from mining waste sedimentation, gold digging, farming, and the proliferation of weedy species (van der Burgt et al. 2016, unpublished report). Conservation actions are critical to protect these threatened plant populations. Restoration efforts, coupled with water quality management and habitat monitoring, are urgently needed to mitigate these threats and safeguard the ecological integrity of this IPA.

Site assessor(s)

Gabriella Hoban, Royal Botanic Gardens, Kew

Xander van der Burgt, Royal Botanic Gardens, Kew

Fanny Massally, Royal Botanic Gardens, Kew

Date of latest reassessment:

12th Jan 2026

Reviewed by:

Martin Cheek, The Royal Botanic Gardens Kew

Fanny Massally, The Royal Botanic Gardens, Kew

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>Anubias gracilis</i> <i>A.Chev. ex Hutch.</i>	A(i)	✓	✓	✓	—	—	Scarce
<i>Aphanocalyx pteridophyllus</i> <i>(Harms) Wieringa</i>	A(i)	✓	✓	✓	—	—	Frequent
<i>Brachystegia leonensis</i> <i>Hutch. & Burtt Davy</i>	A(i)	✓	—	✓	—	✓	Occasional
<i>Cola angustifolia</i> <i>K.Schum.</i>	A(i)	—	—	✓	—	—	Scarce
<i>Dactyladenia smeathmannii</i> <i>(Baill.) Prance & White</i>	A(i)	✓	✓	✓	—	—	Occasional
<i>Paleodissotis leonensis</i> <i>(Hutch. & Dalziel) Ver.-Lib. & Burgt</i>	A(i)	—	—	✓	—	—	Scarce
<i>Baphia spathacea</i> <i>Hook.f.</i>	A(i)	✓	✓	✓	—	—	Scarce
<i>Eremospatha dransfieldii</i> <i>Sunderl.</i>	A(i)	—	—	✓	—	✓	Occasional
<i>Eriocaulon petraeum</i> <i>S.M.Phillips & Burgt</i>	A(i)	✓	✓	✓	—	—	Unknown
<i>Eriocaulon sulanum</i> <i>S.M.Phillips & Burgt</i>	A(i)	✓	✓	✓	—	—	Unknown
<i>Gilbertiodendron aylmeri</i> <i>(Hutch. & Dalziel) J.Léonard</i>	A(i)	✓	✓	✓	—	—	Frequent
<i>Guibourtia leonensis</i> <i>J. Liégeois</i>	A(i)	✓	—	✓	—	✓	Occasional
<i>Landolphia macrantha</i> <i>(K.Schum.) Pichon</i>	A(i)	✓	✓	✓	—	—	Occasional
<i>Millettia leonensis</i> <i>Hepper</i>	A(i)	✓	✓	✓	—	—	Occasional
<i>Rinorea afzelii</i> <i>Engl.</i>	A(i)	—	—	✓	—	—	Scarce

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>Tessmannia baikieaoides</i> <i>Hutch. & Dalziel</i>	A(i)	✓	✓	✓	—	—	Abundant
<i>Napoleonaea alata</i> <i>Jongkind</i>	A(i)	✓	✓	✓	—	—	
<i>Placodiscus pseudostipularis</i> <i>Radlk.</i>	A(i)	✓	✓	✓	—	—	
<i>Sericanthe trilocularis</i> (Scott <i>Elliot</i>) <i>Robbr.</i>	A(i)	✓	✓	✓	—	—	
<i>Aulacocalyx divergens</i> (Hutch. & Dalziel) <i>Keay</i>	A(i)	—	—	—	—	—	
<i>Afzelia africana</i> <i>Sm. ex Pers.</i>	A(i)	—	—	—	—	—	
<i>Turraeanthus africana</i> (Welw. ex <i>C.DC.</i>) <i>Pellegr.</i>	A(i)	—	—	—	—	—	
<i>Entandrophragma cylindricum</i> (Sprague) <i>Sprague</i>	A(i)	—	—	—	—	—	
<i>Milicia regia</i> (A.Chev.) <i>C.C.Berg</i>	A(i)	—	—	—	—	—	
<i>Dialium pobeguinii</i> <i>Pellegr.</i>	A(i)	—	—	—	—	—	
<i>Lophira alata</i> <i>Banks ex Gaertn.f.</i>	A(i)	—	—	—	—	—	
<i>Anopyxis klaineana</i> (Pierre) <i>Engl.</i>	A(i)	—	—	—	—	—	
<i>Copaifera salikounda</i> <i>Heckel</i>	A(i)	—	—	—	—	—	
<i>Homalium smythei</i> <i>Hutch. & Dalziel</i>	A(i)	—	—	—	—	—	
<i>Didelotia afzelii</i> <i>Taub.</i>	A(i)	—	—	—	—	—	
<i>Neolemonniera clitrifolia</i> <i>A.Chev.</i>	A(i)	—	—	—	—	—	
<i>Cryptosepalum tetraphyllum</i> (Hook.f.) <i>Benth.</i>	A(i)	—	—	—	—	—	
<i>Placodiscus oblongifolius</i>	A(i)	—	—	—	—	—	

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>Strychnos melastomatoides</i> Gilg.	A(i)	—	—	—	—	—	
<i>Drypetes afzelii</i> (Pax) Hutch.	A(i)	—	—	—	—	—	
<i>Garcinia kola</i> Heckel	A(i)	—	—	—	—	—	
<i>Pavetta platycalyx</i> Bremek.	A(i)	—	—	—	—	—	
<i>Pavetta lasioclada</i> (K.Krause) Mildbr. ex. Bremek.	A(i)	—	—	—	—	—	
<i>Terminalia ivorensis</i> A.Chev.	A(i)	—	—	—	—	—	
<i>Stylochaeton pilosus</i> Bogner	A(i)	—	—	—	—	—	
<i>Pseudovigna sulaensis</i> R.Clark & Burgt	A(i)	—	—	—	—	—	
<i>Neolemonniera clitandrifolia</i> A.Chev.	A(i)	—	—	—	—	—	
<i>Millettia warneckeii</i> Harms	A(i)	—	—	—	—	—	
<i>Nauclea diderrichii</i> (De Wild. & T.Durand) Merrill	A(i)	—	—	—	—	—	
<i>Monocyclanthus vignei</i> Keay	A(i)	—	—	—	—	—	
<i>Ledermanniella aloides</i> (Engl.) C.Cusset	A(i)	—	—	—	—	—	
<i>Khaya grandifoliola</i> C.DC.	A(i)	—	—	—	—	—	
<i>Garcinia afzelii</i> Engl.	A(i)	—	—	—	—	—	
<i>Ansellia africana</i> Lindl.	A(i)	—	—	—	—	—	
<i>Stonesia gracilis</i> G.Taylor	A(i)	—	✓	✓	—	—	Scarce
<i>Gilbertiodendron tonkolili</i> Burgt & Estrella	A(i)	—	—	—	—	—	
<i>Monocymbium lanceolatum</i> C.E.Hubb.	A(i)	—	—	—	—	—	

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>Schizachyrium lomaense</i> <i>A. Camus</i>	A(i)	—	—	—	—	—	

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
Low-altitude evergreen forest and gallery forest	C(i)	✓	—	—	
Waterfalls with endemic Podostemaceae	C(i)	✓	—	—	
Submontane forest	C(i)	✓	—	✓	

General site habitats

GENERAL SITE HABITAT	PERCENT COVERAGE	IMPORTANCE
Forest - Subtropical/Tropical Moist Lowland Forest	—	
Wetlands (inland) - Permanent Rivers, Streams, Creeks [includes waterfalls]	—	
Artificial - Terrestrial - Subtropical/Tropical Heavily Degraded Former Forest	—	

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Extractive industry	20	Major

Threats

THREAT	SEVERITY	TIMING
Agriculture & aquaculture - Annual & perennial non-timber crops - Small-holder farming	Medium	Ongoing - trend unknown
Natural system modifications - Dams & water management/use - Abstraction of surface water (unknown use)	Medium	Ongoing - stable
Natural system modifications - Dams & water management/use - Abstraction of surface water (commercial use)	High	Ongoing - stable
Energy production & mining - Mining & quarrying	High	Ongoing - stable
Pollution - Agricultural & forestry effluents - Soil erosion, sedimentation	Medium	Ongoing - trend unknown

Protected areas

PROTECTED AREA NAME	PROTECTED AREA TYPE	RELATIONSHIP WITH IPA	AREAL OVERLAP
Farangbaia Forest Reserve	National Reserve	protected/conservation area overlaps with IPA	80

Bibliography

Goodenough, K. M., Jones, D. & Ford, J. 2018. **Geological Mapping of Sierra Leone: Baseline Assessment and Next Steps** (unpublished).

National Minerals Agency Sierra Leone 2024. **Government of Sierra Leone Online Repository of Mining Licences.**

Phillips, S.M., van der Burgt, X.M. & Kanu, K.M.T. 2012. **Two new species of Eriocaulon (Eriocaulaceae) from Sierra Leone.** Kew Bulletin, Vol 67, page(s) 273-280

van der Burgt, X., Lopez Poveda, L., Cheek, M., Goodwin, C., Pollard, B. & Darbyshire, I. 2016. **Sula Mountains and transport corridor plant species of conservation importance** (unpublished report).

ANTHONY T.LAMIN-SAMU AND ABDUL .B. KARIM 2015. **THE COMPENDIUM OF RARE AND THREATENED FOREST FLORA IN SIERRA LEONE.** ENVIRONMENTAL PROTECTION AGENCY-SIERRA LEONE