



TIPA ASSESSMENT: KOUKOUTAMBA WATERFALLS, TOUGUE PREFECTURE

ABSTRACT

The rapids and waterfalls at Koukoutamba are particularly rich in Podostemaceae. It is the only known location in Guinea for the Critically Endangered Podostemaceae species *Lebbiea grandiflora* and a new species of *Inversodicraea* (*I. koukoutamba* ined.). These species are threatened with extinction from the planned hydroelectric dam.

Charlotte Couch and Martin Cheek

TIPA Assessment: Koukoutamba waterfalls, Tougué prefecture.

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

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IPA assessment rationale

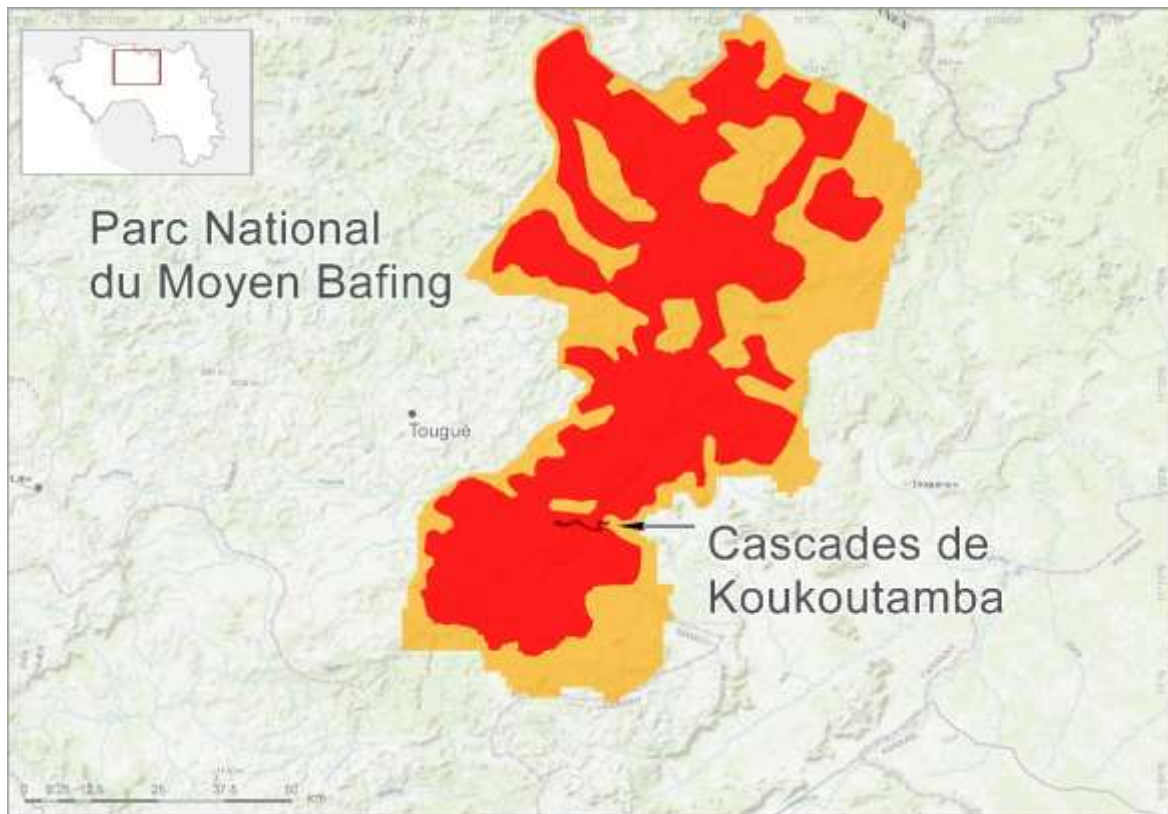
The rapids and waterfalls at Koukoutamba are the most species-rich known for Podostemaceae in Guinea with five species. It is the only known location in Guinea for the Critically Endangered (CR) Podostemaceae species *Lebbiea grandiflora* and the only global location for the spectacular new species *Inversodicraea koukoutamba* ined. These species are directly and imminently and imminently threatened with extinction from the planned hydroelectric dam. In addition the globally Endangered (EN) *Stonesia taylorii* and the Critically Endangered (CR) *Barleria asterotracha* are also present and threatened by the project.

Site overview

| | |
|--|-------------------------------|
| Site Name: Koukoutamba waterfalls | |
| Country: Guinea | Administrative region: Tougué |
| Central co-ordinates: 13°16'11"N, 11°22'47"W | Area: 27.5 km ² |
| Altitude minimum: 450 m | Altitude maximum: 470 m |

Site Description

The Koukoutamba Falls are on the Bafing River upriver from the main road N27 in Tougué Prefecture. It is a fast flowing area of rapids and waterfalls. for around 12km below the main falls, the river is flanked by a thin strip of gallery forest dominated by *Syzygium guineense* var. *guineense*.



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

Botanical significance

The succession of fast flowing rapids and waterfalls at Koukoutamba on this stretch of the Bafing River is particularly rich in rheophyte species. It is the only known location in Guinea for the Critically Endangered Podostemaceae species *Lebbiea grandiflora* (newly described in 2018) and two other highly threatened species of Podostemaceae.

General habitat and geology description

The Bafing River flows through a valley of sandstone, argillite interlayered with limestone and silica over conglomerate base rock. The unequal erosion is likely to be the cause of the rapids and waterfalls on the river. Narrow strips of gallery forest dominated by *Syzygium guineense* var. *guineense* are found either side of the river with bowal areas behind and seasonal gullies draining into the river.

Conservation issues

The Koukoutamba falls are threatened by the creation of a hydroelectric dam. Despite the falls being encompassed within the Moyen Bafing National Park, if construction is allowed upstream (outside of the park area) it will significantly alter the hydrology of the river and very likely cause silt deposits exterminating the threatened and in one case globally unique Podostemaceae species.

Protected area status and Management

The area is within the Moyen Bafing National Park, designated in 2018. The protected area encompasses part of TIPA (c.16km²). A management plan is currently being put in place by the Wild Chimpanzee Foundation.

Threats

Infrastructure: Construction of a hydroelectric dam is planned upstream 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>Lebbiea grandiflora</i> Cheek | A(i) | CR | ☉ | ☉ | ☉ | | | Frequent |
| <i>Inversodicraea harrisii</i> (C.Cusset) Cheek | A(i) | VU | ☉ | ☉ | ☉ | | | Frequent |
| <i>Stonesia taylorii</i> C.Cusset | A(i) | EN | ☉ | ☉ | ☉ | | | Frequent |
| <i>Inversodicraea Koukoutamba</i> ined. | A(i) | CR | ☉ | ☉ | ☉ | ☉ | | Abundant |
| <i>Barleria asterotricha</i> Benoist | A(i) | CR | ☉ | ☉ | ☉ | | | Scarce |

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 |
| Waterfalls and rapids with Podostemaceae | ⊙ | ⊙ | ○ | ○ | ○ | ○ |

| *Criterion B taxon present | Sub-criterion under which species qualifies | For B(i) – indicator of habitat | *Abundance at site |
|---|---|--|--------------------|
| <i>Lebbiea grandiflora</i> Cheek | B(i) | Waterfalls and rapids with Podostemaceae | Frequent |
| <i>Inversodicraea harrisii</i> (C.Cusset) Cheek | B(i) | Waterfalls and rapids with Podostemaceae | Frequent |
| <i>Stonesia taylorii</i> C.Cusset | B(i) | Waterfalls and rapids with Podostemaceae | Frequent |
| <i>Inversodicraea koukoutamba</i> ined. | B(i) | Waterfalls and rapids with Podostemaceae | Abundant |

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)) | |
| Waterfall and Rapids with Podostemaceae | C (iii) | | ○ | ⊙ | c.12km ² |

Bibliography

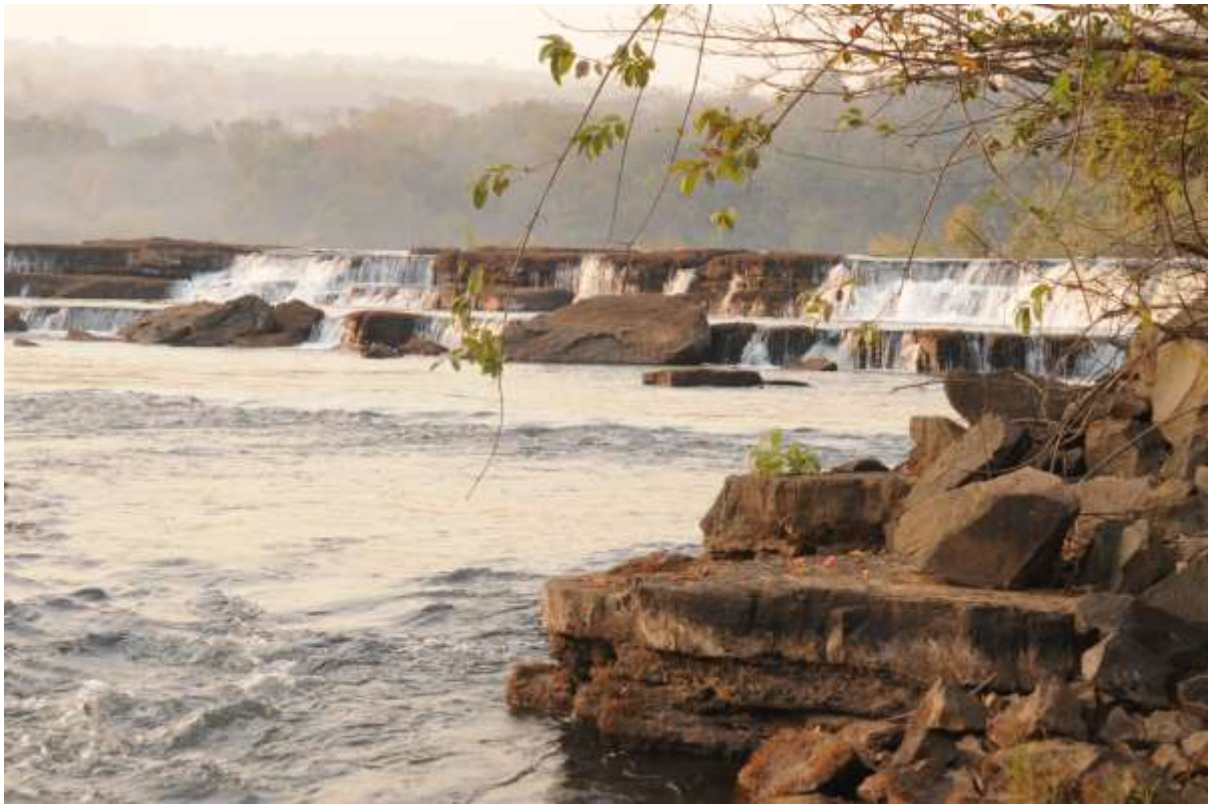
Cheek M, Lebbie A (2018) *Lebbiea* (Podostemaceae-Podostemoideae), a new, nearly extinct genus with foliose tepals, in Sierra Leone. PLoS ONE 13(10): e0203603. <https://doi.org/10.1371/journal.pone.0203603>

<http://www.invest.gov.gn/document/projet-hydroelectrique-de-koukoutamba>

IUCN Red List: www.redlist.org

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>

Site in pictures



Koukoutamba Waterfalls in January 2018. Photo: M. Cheek, ©RBG Kew



Koukoutamba waterfall with 'carpets' of Podostemaceae in January 2018. Photo: M. Cheek, ©RBG Kew



Koukoutamba waterfalls in June 2018. Photo: ©Charlotte Couch, RBG Kew.

Examples of Podostemaceae



Lebbiea grandiflora Cheek. Photo: M. Cheek, ©RBG Kew



Stonesia taylorii C.Cusset Photo: M. Cheek, ©RBG Kew



Inversodicraea koukoutamba ined. Photo: M. Cheek, ©RBG Kew