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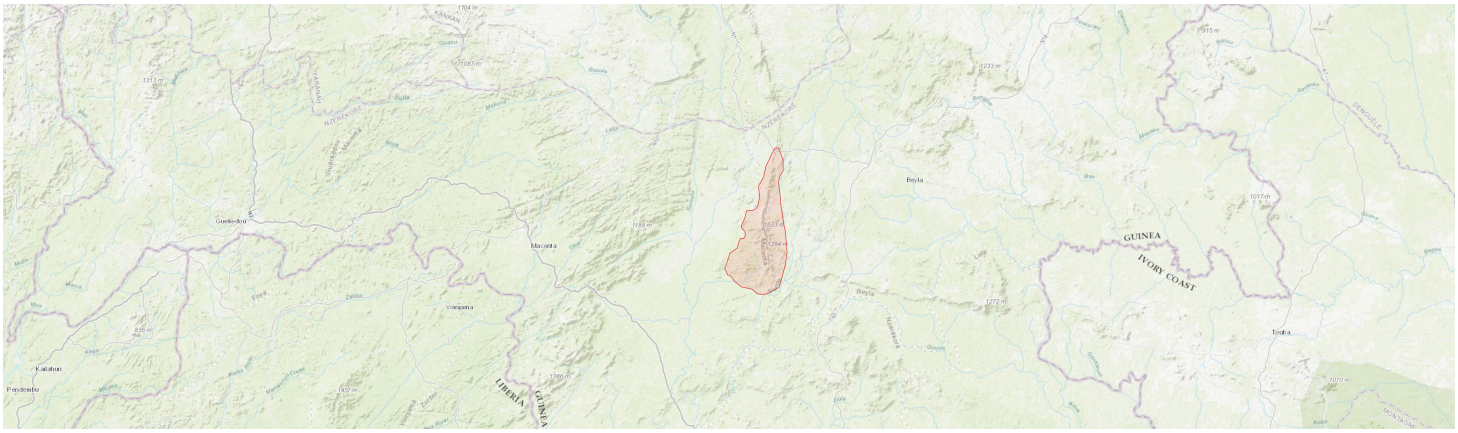
Southern Simandou Mountains

Montagnes Sud de Simandou (Test version)

GUITIPA018



Country: **Guinea**
Administrative region: **Beyla (Prefecture)**
Central co-ordinates: **8.53333 N, -8.91667 E**
Area: **368km²**

Qualifying IPA criteria

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

IPA assessment rationale

The southern Simandou Mountains have the second highest diversity of plant species in Guinea after the Nimba Mountains, with over 1,400 documented plant species and c. 40 threatened species, including one species globally endemic to Pic de Fon. Although the Pic de Fon Classified Forest has a management plan, there have been some oversights in the plan impacting on the plant species. A lack of on-the-ground protection and management has led to increased artisanal diamond mining in the submontane and lowland forest at Banko, the largest area of previously intact forest in the area. Mining and the associated infrastructure will have a significant impact on the vegetation of the area when it goes ahead.

Site description

The southern Simandou range of mountains is situated in the south-east of Guinea. It straddles the prefectures of Macenta and Beyla and is part of the Loma-Man range that extends into Sierra Leone. The highest peak, Pic de Fon, reaches 1,658m. It has species associations with the Guinea Highlands (Fouta Djallon) and with the Nimba Mountains. The ridges and flanks have a mosaic of submontane forest and submontane lateritic (ferralitic) bowal (grassland) with high species diversity, both of which are recognised as Threatened Habitats of Guinea.
The area has extensive iron ore deposits and a mining concession has been granted by the government to Rio Tinto. A Social and Environmental Impact Assessment (SEIA) was carried out between 2005 and 2011 and was submitted to government in 2012. A management plan was agreed by the government in 2010, the area is locally managed by the Centre for the Management of the Environment of the Nimba and Simandou Mountains (CEGENS).

Botanical significance

The Simandou range is of a similar age to the Nimba Mountains and has many shared species in both the submontane forest and submontane ferralitic bowal. Recent studies in the southern Simandou Mountains have documented more than 1,400 plant species including c. 40 threatened species, ranging from Critically Endangered (CR) to Vulnerable (VU), many of which will be impacted by the mining concession. The transition zone between the

submontane forest and ferralitic bowal grassland has many rare and endangered plant species, such as Lipotriche tithonioides and Acalypha guineensis. The submontane grassland has a high species diversity with many endangered species (e.g. Xysmalobium samoritourei, Dissotis (Anaheterotis) pobeguinii, Rhytachne glabra, and Kotschya lutea). It also hosts the one and only globally endemic species to Pic de Fon, Eriosema triformum. There is also some high-altitude bowal with temporary seepage or swamp areas with Kotschya micrantha, Nemum bulbostyloides, and Utricularia spp. Some species historically also found in the Fouta Djallon and Simandou (e.g. Keetia futa and Habenaria jaegeri) are no longer present in the Fouta Djallon and therefore the Simandou mountains are the last refuge for these species in Guinea.

Habitat and geology

The Simandou Mountains represent a rift area of the early Proterozoic era, similar in age and structure to the Nimba range intrusion. The range comprises itabirite, quartzite, and other schists emplaced onto a terrain of tonalitic granite-gneiss, migmatite and sedimentary gneisses. There is a significant iron ore deposit along the ridge top which is in the forms of haematites and goethites enriched from long-term leaching and weathering processes.

Conservation issues

There are several current threats to the southern Simandou Mountains. See below for further details.

The mine will occupy a total area of approximately 6,400 hectares (ha), including safety and security zones around the works. Within this area, a total of approximately 3,750ha will be occupied by the mine pits, waste emplacements, other developed areas, roads, and conveyors. The remaining area will not be cleared of vegetation but will be under the management of the Mine Operations team and will not be available for social or commercial use by the public (Simandou SEIA. Volume I. Mine. 2012).

A detailed SEIA was carried out between 2005 and 2011 to support a plan to minimise the impact of mining on all aspects of the environment. In the report, vegetation types are given a value based on specific criteria relating to distribution and diversity. Submontane lateritic (ferralitic) bowal (grassland), submontane forest, submontane forest-grassland (ferralitic bowal), transition areas, and high-altitude bowal with swamps are all labelled as high-value habitats. It has been previously proposed by Simfer/Rio Tinto that the forest on the western side and the area at Dabatini peak would be left as conservation areas. However, the current mine footprint will remove half of the known population of the Critically Endangered and globally unique Eriosema triformum. The status of the mine is currently unknown, but there has been reduction in activity since 2015.

There is a management plan in place which implicates community-led conservation organisations, Centre Forestière de Nzérékoré, and CEGENS, with support from Simfer/Rio Tinto. The total area under management is 16,887ha (66.9% of the total forested area). There is a core Protected Area with restricted access of 8,839ha (35% of the total area of the Classified Forest). There is also a 'production zone' of 8,048ha (31.9 % of the total area of the Classified Forest). (Pic de Fon Management Plan. 2010).Lack of on-the-ground protection from the managing authorities has led to increased forest destruction within the Classified Forest from artisanal diamond mining, visible via Google Earth imagery.

The TIPA will take into account that there is a mining concession within the proposed area, but that the mining company should work to minimise damage to the identified high-value vegetation types.

Site assessor(s)

Charlotte Couch, Royal Botanic Gardens Kew

Martin Cheek, Royal Botanic Gardens Kew

Xander van der Burgt, 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
Lipotriche tithonioides (Aké Assi) D.J.N.Hind	A(i)	✓	✓	✓	–	–	Common
Acalypha guineensis J.K. Morton & G.A.Lavin	A(i)	✓	✓	✓	–	–	Common
Kotschya lutea (Portères) Hepper	A(i)	✓	✓	✓	–	–	Frequent
Garcinia afzelii Engl.	A(i)	–	–	–	–	✓	Scarce
Pavetta lasioclada (K.Krause) Mildbr. ex. Bremek.	A(i)	✓	–	✓	–	–	Scarce
Polystachya orophila Stévart & E.Bidault	A(i)	✓	✓	✓	–	–	Scarce
Rhytachne glabra (Gledhill) Clayton	A(i)	✓	✓	✓	–	–	Frequent
Dorstenia astyanactis Aké Assi	A(i)	✓	✓	✓	–	–	Scarce
Amorphophallus abyssinicus (A.Rich.) N.E.Br. subsp. akeassii Ittenb.	A(i)	✓	✓	✓	–	–	Scarce
Kotschya micrantha (Harms) Hepper	A(i)	✓	✓	✓	–	–	Common
Nemum bulbostyloides (Hooper) J.Raynal	A(i)	✓	✓	✓	–	–	Frequent
Milicia regia (A.Chev.) C.C.Berg	A(i)	–	–	–	–	✓	Scarce
Cryptosepalum tetraphyllum (Hook.f.) Benth.	A(i)	✓	–	✓	–	–	Frequent
Isoglossa dispersa I.Darbysh. & L.J.Pearce	A(i)	✓	✓	✓	–	–	Common
Brachystephanus oreacanthus Champl.	A(i)	✓	✓	✓	–	–	Common

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
Utricularia macrocheilos (P.Taylor) P.Taylor	A(i), A(iii)	✓	–	–	–	–	Scarce
Entandrophragma angolense (Welw.) C.DC.	A(i)	–	–	–	–	✓	Scarce
Entandrophragma candollei Harms	A(i)	–	–	–	–	✓	Scarce
Garcinia kola Heckel	A(i)	–	–	–	–	✓	Scarce
Cola angustifolia K.Schum.	A(i)	✓	–	–	–	–	Occasional
Drypetes afzelii (Pax) Hutch.	A(i)	✓	–	–	–	–	Frequent
Copaifera salikounda Heckel	A(i)	–	–	–	–	✓	Scarce
Afzelia africana Sm. ex Pers.	A(i)	–	–	–	–	✓	Frequent
Khaya grandifoliola C.DC.	A(i)	–	–	–	–	✓	Scarce
Pavetta platycalyx Bremek.	A(i)	✓	–	–	–	–	Scarce
Nauclea diderrichii (De Wild. & T.Durand) Merrill	A(i)	–	–	–	–	✓	Frequent
Lophira alata Banks ex Gaertn.f.	A(i)	–	–	–	–	✓	Scarce
Anopyxis klaineana (Pierre) Engl.	A(i)	–	–	–	–	✓	Scarce
Gladiolus praecostatus Marais	A(i)	✓	✓	✓	–	–	Common
Habenaria jaegeri Summerh.	A(i)	✓	✓	✓	–	–	Common
Eriosema triformum Burgt	A(i)	✓	✓	✓	✓	–	Common
Xysmalobium samoritourei Goyder	A(i)	✓	✓	✓	–	–	Scarce
Psychotria samoritourei Cheek	A(i)	✓	✓	✓	–	–	Scarce
Mitragyna stipulosa (DC.)	A(i)	–	–	–	–	✓	Unknown

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
Kuntze							
Anubias gracilis A.Chev. ex Hutch.	A(i)	✓	✓	✓	–	–	Scarce
Anaheterotis pobeguinii (Hutch. & Dalziel) Ver.-Lib. & G.Kadereit	A(i)	✓	✓	✓	–	–	Frequent
Mikaniopsis tedliei (Oliv. & Hiern) C.D.Adams	A(i)	✓	✓	✓	–	–	Occasional
Leplaea cedrata (A.Chev.) E.J.M.Koenen & J.J.F.E.de Wilde	A(i)	–	–	–	–	✓	Scarce
Keetia futa Cheek	A(i)	✓	✓	✓	–	–	Scarce
Amorphophallus abyssinicus (A.Rich.) N.E.Br. subsp. akeassii Ittenb.	A(i)	–	–	–	–	–	Scarce
Nemum bulbostyloides (Hooper) J.Raynal	A(i)	–	–	–	–	–	Frequent
Cryptosepalum tetraphyllum (Hook.f.) Benth.	A(i)	–	–	–	–	–	Common
Keita deniseae Cheek	A(i)	✓	✓	✓	–	–	Scarce

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
High Altitude Lateritic Bowal Grasslands	C(iii)	–	✓	✓	
Guinean Highland Submontane Forest	C(iii)	–	✓	✓	
West African Lowland Evergreen Forest	C(iii)	–	✓	✓	

General site habitats

GENERAL SITE HABITAT	PERCENT COVERAGE	IMPORTANCE
Forest - Subtropical/Tropical Moist Lowland Forest	–	Minor
Forest - Subtropical/Tropical Moist Montane Forest	–	Major
Grassland - Subtropical/Tropical High Altitude Grassland	–	Major

GENERAL SITE HABITAT	PERCENT COVERAGE	IMPORTANCE

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Extractive industry	–	Major
Agriculture (pastoral)	–	Minor
Nature conservation	–	Minor

Threats

THREAT	SEVERITY	TIMING
Agriculture & aquaculture - Annual & perennial non-timber crops - Shifting agriculture	High	Ongoing - increasing
Agriculture & aquaculture - Livestock farming & ranching - Nomadic grazing	Medium	Ongoing - increasing
Energy production & mining - Mining & quarrying	High	Future - planned activity
Natural system modifications - Fire & fire suppression - Suppression in fire frequency/intensity	Medium	Ongoing - stable
Invasive & other problematic species, genes & diseases - Invasive non-native/alien species/diseases - Named species	Unknown	Ongoing - increasing
Natural system modifications - Fire & fire suppression - Increase in fire frequency/intensity	Medium	Ongoing - stable
Energy production & mining - Mining & quarrying	High	Ongoing - increasing

Protected areas

PROTECTED AREA NAME	PROTECTED AREA TYPE	RELATIONSHIP WITH IPA	AREAL OVERLAP
Pic de Fon Forêt Classé	Classified Forest	protected/conservation area overlaps with IPA	–

Management type

MANAGEMENT TYPE	DESCRIPTION	YEAR STARTED	YEAR FINISHED
Site management plan in place	Plan d'Aménagement et Plan de Gestion de la Forêt Classée du Pic de Fon	2010	2030

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