

Status and Conservation of Flora in Nigeria

An invited lecture presented at the Bimonthly Virtual Webinar organized by the Nigerian Society for Conservation Biology (NSCB) on July 13th 2022

By

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Nigerian Society for Conservation Biology (NSCB)

... advancing the conservation and protection of Nigeria's biodiversity.

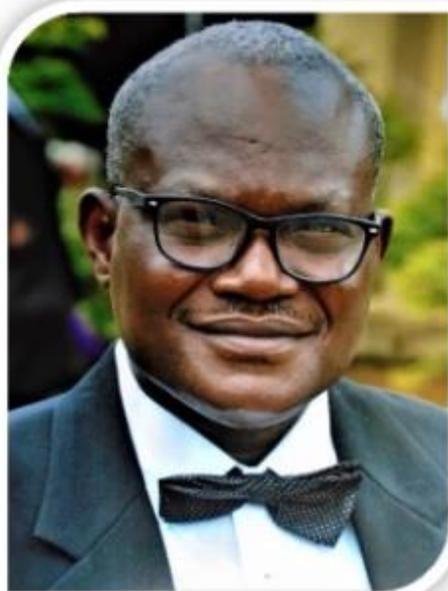


gladly Invites

all to her bimonthly webinar

virtual

**TOPIC: Status and
Conservation of Flora in
Nigeria**



Speaker: Emmanuel Aigbokhan PhD,
Professor of Botany



July 13th 2022



2:00 – 4:00pm (WAT)



603 663 8257



**NSCB-
2022**



<https://us02web.zoom.us/j/6036638257?pwd=UHVERmZRQIA5K3o2ZkgwREVVVVBYdz09>

Preface

- I wish to thank Dr. Afolayan O. Adedotun, the President, Nigerian Society for Conservation Biology (NSCB), Dr. Fatsuma Olaleru and other members of the Executive and Board NSCB, for the privilege of selecting me to give this presentation. When I was first approached to give this talk, the first questions that crossed my mind were, **“Is there a Flora of Nigeria?”** and **“what would be required to determine the conservation status of flora in Nigeria?”**.
- Being a rather laissez-faire and laid back researcher/academic but with a serious knack for thoroughness, my dilemma was compounded with a rather very short notice given to put together a presentation (no thanks to the organizers).
- I am however, thankful to share my perspectives on this rather important topic bothering on a vital subject matter of great national and international importance. The following are my thoughts and findings:

Preamble

- “... Nigeria is endowed with enormous biodiversity that includes the freshwater swamp forest, mangrove forest and coastal vegetation, lowland forest, derived savannah, guinea savannah, Sudan/Sahel savannah, and montane ecosystems.
- Each of these ecosystems has its diverse species of fauna and flora with diverse genetic endowments.
- Biodiversity plays vital and diverse roles in our economy, ecology and social lives. We use it as food, fibre, domestic and commercial products, medicine, and for aesthetics and culture, agriculture, knowledge, and industrial processes.
- We will therefore ensure that it is studied, valorized, conserved and developed in a way that it will bring sustainable benefits to all Nigerians...”
- These statements were culled from the Foreword ascribed to Mrs. Amina J. Mohammed, the former Honourable Minister of Environment in the revised 2016-2020 National Biodiversity Strategy and Action Plan (NBSAP) and aptly summarizes the essence and scope of conserving the nation’s biodiversity.
- The NBSAP **report outlined fourteen (14) targets** , and the following three are relevant to our subject of discussion today:
- **Target 1:** By 2020, 30% of Nigeria’s population is aware of the importance of biodiversity to the ecology and economy of the country.
- **Target 5:** By 2020, six (6) management plans are implemented for habitats of endemic and threatened plants and animals, including sites for migratory species.
- **Target 6** specifically states that by 2020, at least 10% of Nigeria’s national territory is sustainably managed in conservation areas at varied levels of authority, with representation of all ecosystem types.

Abstract

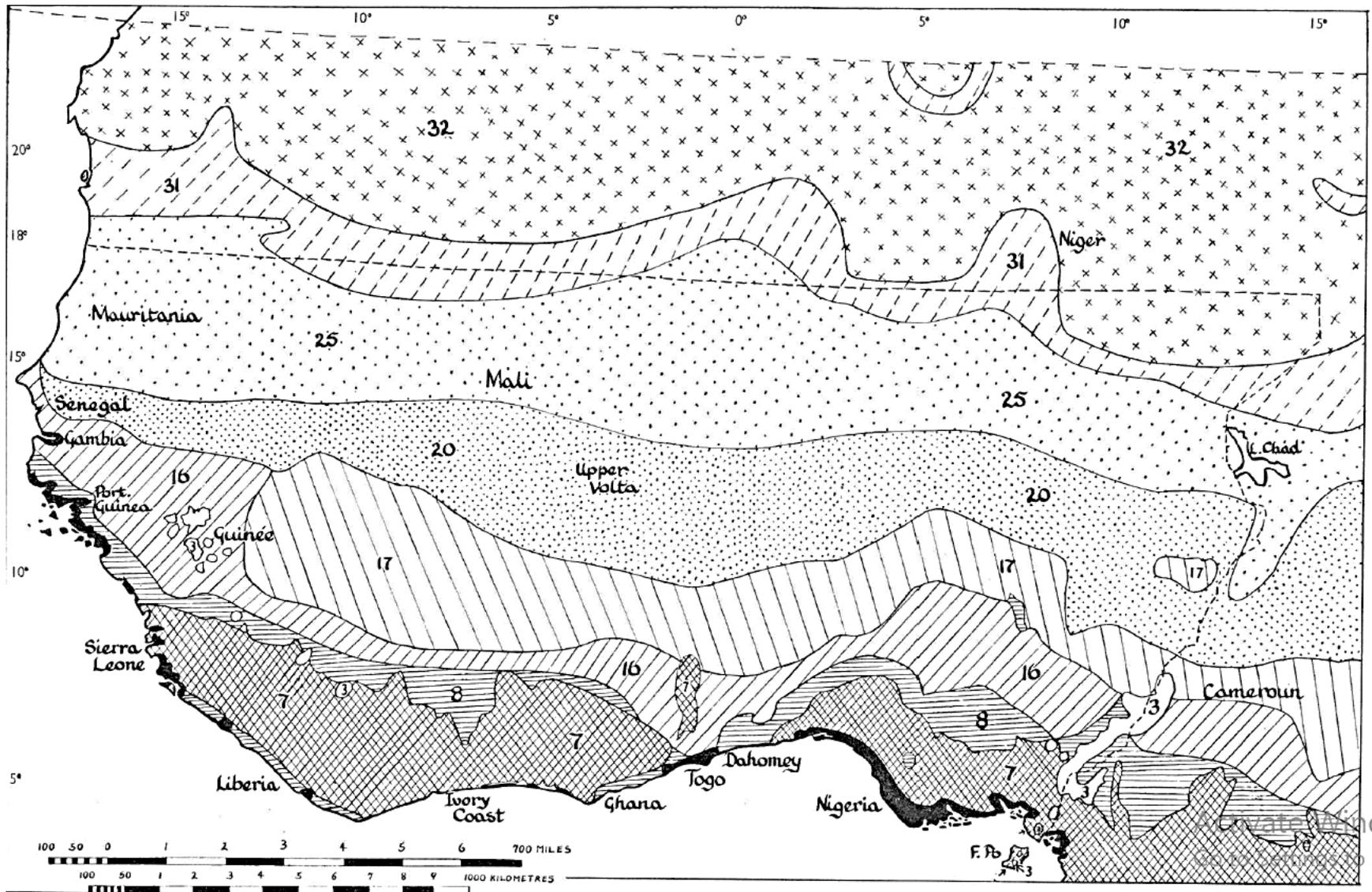
Up-to-date information on biodiversity is critical for the proper management and conservation of any area. A major attribute of a National Flora is the generation of a database of checklist of species from which other parameters including conservation status could easily be computed. Presently, except for a couple of floras of restricted plant families, *Flora of Nigeria-Grasses* [Poaceae] and *Flora of Nigeria-Sedges* [Cyperaceae], no single comprehensive Flora of Nigeria exists. Several attempts to develop the Flora of Nigeria ended inconclusively in spite of the enormous commitment of time and funds. Because of the unavailability of a substantive checklist or flora, numerical data on plant diversity in Nigeria are often divergent, inconsistent or downright spurious. Such data puts to question the accuracy or authenticity of documentary estimates originating from Nigeria. A major reason for such is probably because most plant biodiversity data from Nigeria are often extracts from the *Flora of Tropical West Africa*, published over fifty years ago(1954-72). The unreliability of these documented estimates from Nigeria may have necessitated some international organizations to tag disclaimer statements to biodiversity records linked to Nigeria. To remedy all the observed shortfalls, it is imperative to initiate proper documentation of the vast plant diversity and resources in Nigeria as a prelude to the preparation of a comprehensive Flora of Nigeria. This data-driven process will enhance and guarantee the accuracy and reliability of plant diversity records from Nigeria, and enhance the preparation of adequate conservation strategy and conservation assessments which would consequently stem the loss of plant diversity. Adequate funding of taxonomic expeditions and research and the engagement of research experts in superintending over the compilation biodiversity data in Nigeria is imperative. Examples of recently discovered plant species in Nigeria and the utility of a checklist and database in generating conservation status data was demonstrated using the Ogba Zoo and Nature Park, Benin City as a case study.

LOWLAND TROPICAL RAINFOREST



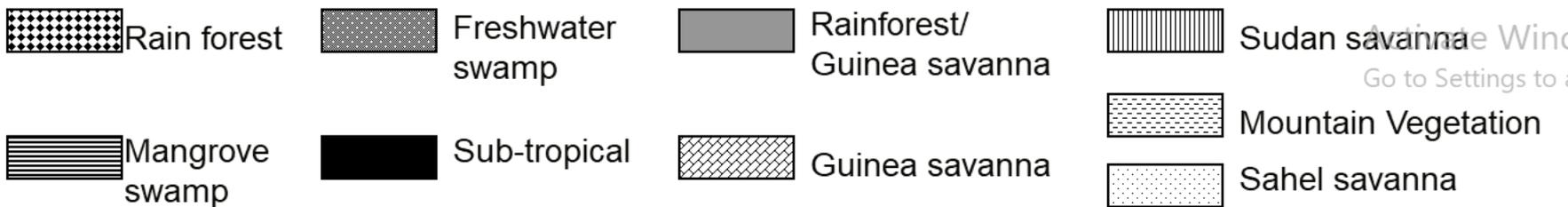
Okomu National Park, Edo State, Nigeria

West African Vegetation



(See explanation on page 150)

West African Vegetation



NIGERIA in focus

Some Statistics on West African Vegetation

Numerical Composition of West African Flora

Group	Families	Genera	Species
Pteridophytes	27	72	312
Gymnosperms	3	3	4
Angiosperms			
Dicotyledons	159	1298	5211
Monocotyledons	40	368	1822
Total	199	1666	7033
Angiosperms			
Grand Total	299	1741	7349

Hepper, F. N. (1972). Gill, L.S. (1990)



Vegetation types of Nigeria

- **Dry Coastal Vegetation:** This vegetation type is
- **found in coastal areas** where **mangroves are not found.**
- Occurs mainly **as a strand vegetation** dominated by **halophytes** on sandy shores and sandbars
- **away from the direct influence of large rivers.**
- **Undisturbed Rain Forest or High Evergreen Rainforest:**
- Consists of **evergreen hydrophytic plants of great species diversity.**
- **Characteristically stratified into three layers.**
- **Tall trees of 40-60 m high comprise the Emergent layer** which **do not necessarily form continuous canopy.**

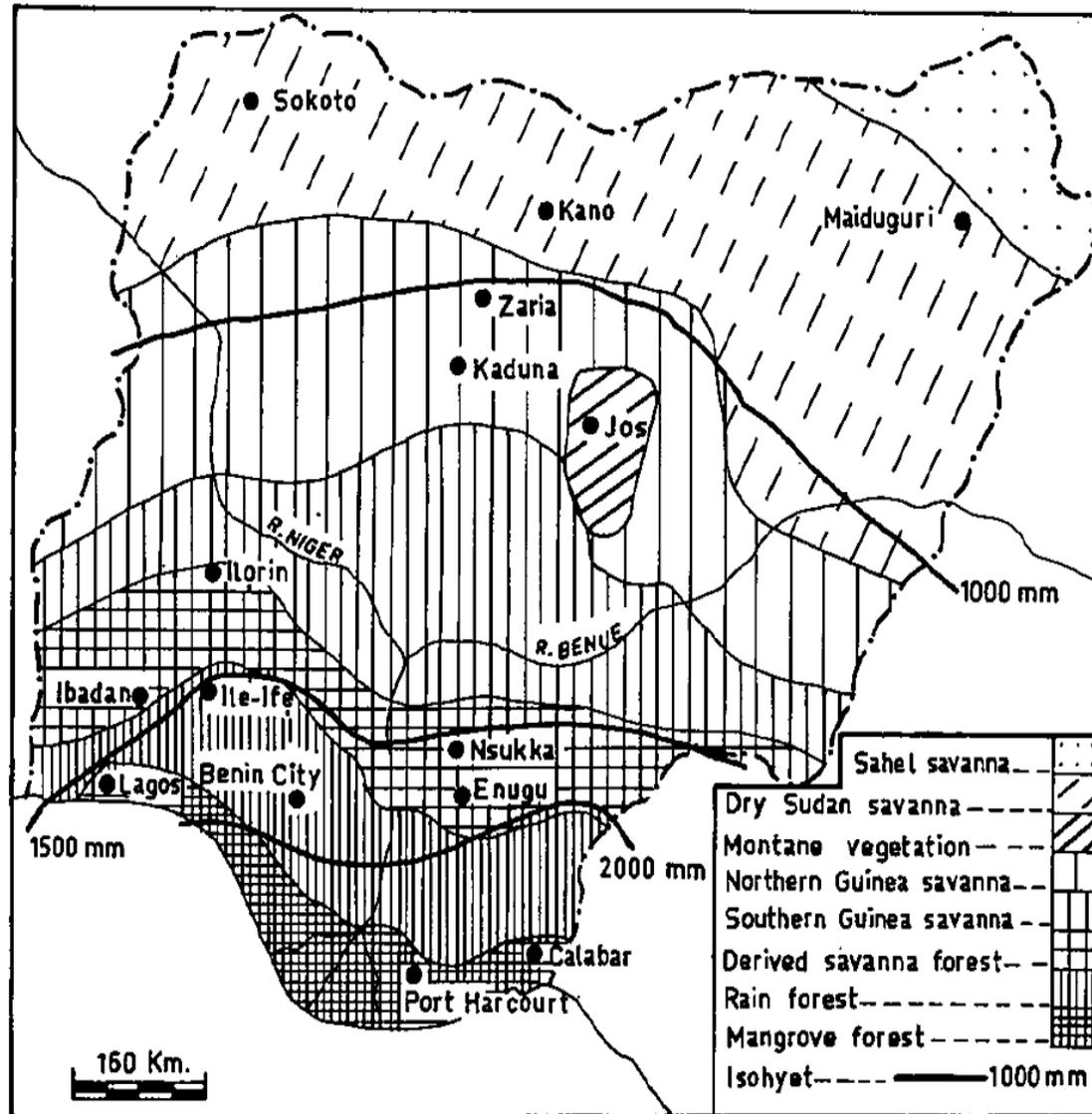
Vegetation types of Nigeria

- **Sudan Savanna:** Composed of predominantly shrubs and dense grasses with minor tree component with mixed combretaceous woody trees and shrubs.
- **Savanna woodlands:** Predominantly composed of trees and shrubs which forms a fairly closed canopy.
- **Plantation Forest:** Artificial forest plantation of the both indigenous species and exotic species such as teak and Gmelina. E.g. **Ogba Zoo and Nature Park, Benin City.**

Vegetation types of Nigeria

- **Mangrove Forest:** Occurs on the muddy banks of creeks and in tidal channels in portion where the water is brackish.
- **Montane Forest** also referred to as "**Mist Forest**": Occurs on high attitudes of above 1000m. Characterized by broken canopies and associated with massive profusions of various kinds of epiphytes.
- **Disturbed Forest:** Characterized by arrears of native forest that consists of open canopies that are as a result of human disturbance.
- **Riparian Forest:** Characterized by its location adjacent to water courses and its dense closed canopy.

Vegetation regions in Nigeria



Source: Ademosun, 1973

Panoramic View of Sahel Savanna



Photo credit: E. I. Aigbokhan

Sudan savanna



Photo credit: E. I. Aigbokhan

Guinea savanna



Photo credit: E. I. Aigbokhan

Montane Forest - Obudu



Photo credit: E. I. Aigbokhan

Plantation Forest



Photo credit: E. I. Aigbokhan

Fresh Water Riparian Marsh



Photo credit: E. I. Aigbokhan

Mangrove Brackish Swamp Forest



Photo credit: E. I. Aigbokhan

Okomu Lowland Evergreen Rainforest



Photo credit: E. I. Aigbokhan

Some Statistics on Nigeria Vegetation

The Three major types of vegetation

Vegetation	Area covered	Location in Nigeria
Tropical Rainforest	39%	Southern most of Nigeria
Tropical Deciduous Forest	39%	Central Nigeria
Tropical Xerophytic Woodland	22%	Northern Nigeria

FAO- Forest area statistics - Nigeria

Characteristics of forest and other wooded land

FRA 2005 categories	Area (1000 hectares)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Primary	1,556	736	326	0	0	0
Modified natural	15,427	12,085	10,414	9,717	6,902	5,495
Semi-natural	0	0	0	0	0	-
Productive plantation	251	316	349	0	0	0
Protective plantation	0	0	0	0	0	0
Total	17,234	13,137	11,089	9,717	6,902	5,495

Data source: FAO, Global Forest Resources Assessment 2005.

FAO- Forest area statistics - Nigeria

Extent of forest and other wooded land

FRA 2005 categories	Area (1000 hectares)		
	1990	2000	2005
Forest	17,234	13,137	11,089
Other wooded land	9,717	6,902	5,495
Forest and other wooded land	26,951	20,039	16,584
Other land	64,126	71,038	74,493
...of which with tree cover	147	195	220
Total land area	91,077	91,077	91,077
Inland water bodies	1,300	1,300	1,300
Total area of country	92,377	92,377	92,377

Data source: FAO, Global Forest Resources Assessment 2005.

Inventory of plant species in Nigeria

GROUPS OF PLANTS	FAMILIES	GENERA	SPECIES
Algae	67	281	1335
Lichens	-	14	17
Fungi (Mushrooms)	26	60	134
Mosses	-	13	16
Liverworts	-	16	6
Pteridophytes	27	64	165
Gymnosperms	2	3	5
Chlamydosperms	2	2	6
Monocotyledons	42	376	1575
Dicotyledons	172	1396	4636
Total	338	2,215	7,895

Compare with
West Africa



Nigeria Biodiversity And Tropical Forestry Assessment



USAID | NIGERIA
FROM THE AMERICAN PEOPLE



NIGERIA BIODIVERSITY AND TROPICAL FORESTRY ASSESSMENT

MAXIMIZING AGRICULTURAL REVENUE IN
KEY ENTERPRISES FOR TARGETED SITES (MARKETS)

June 2008

This publication was produced for review by the United States Agency for International Development. It was prepared by Chemonics International Inc.

Group	Families	Genera	Species
Pteridophytes	????	????	????
Gymnosperms	????	????	????
Angiosperms	????	????	????
Dicotyledons	????	????	????
Monocotyledons	????	????	????
Total Angiosperms	????	????	????
Grand Total	????	????	5103
Endangered trees	85		
Threatened plants	171		

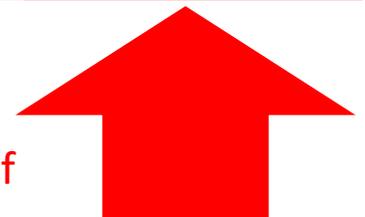
USAID/Nigeria (2008)

Numerical Composition of Nigerian Flora

Group	Families	Genera	Species
Pteridophytes	42	????	????
Gymnosperms	5	????	????
Angiosperms	????	????	????
Dicotyledons	????	????	????
Monocotyledons	????	????	????
Total Angiosperms	238	1541	????
Grand Total	285	????	5029

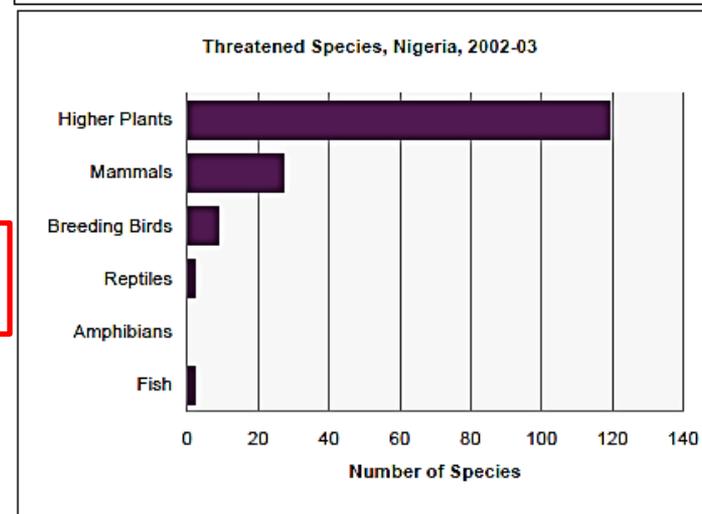
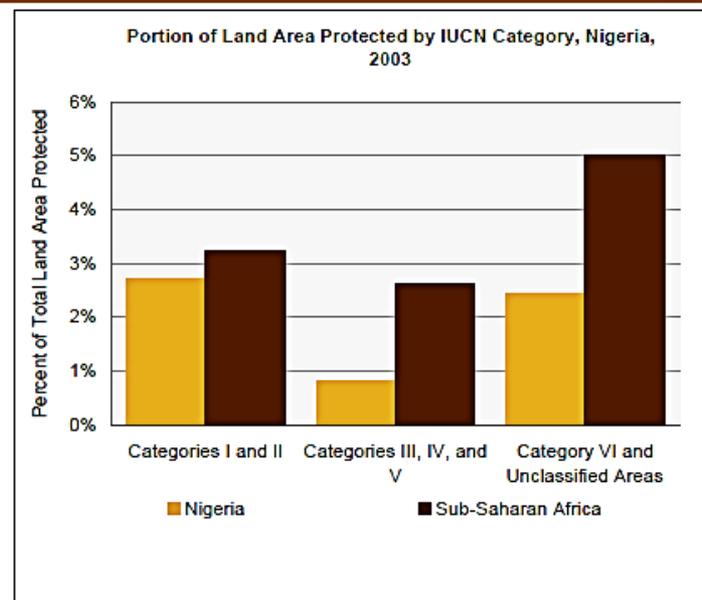
Ayodele & Yang (2012)

(including 183 infraspecific taxa consisting of 45 subspecies, 133 varieties, and 5 forms).





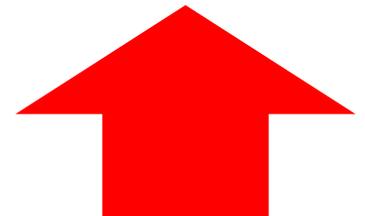
	Nigeria	Sub-Saharan Africa	World
Total Land Area (000 ha)	92,377	2,429,241	13,328,979
Protected Areas			
<i>Extent of Protected Areas by IUCN Category (000 ha), 2003:</i>			
Nature Reserves, Wilderness Areas, and National Parks (categories I and II)	2,509	78,828	438,448
Natural Monuments, Species Management Areas, and Protected Landscapes and Seascapes (categories III, IV, and V)	745	63,482	326,503
Areas Managed for Sustainable Use and Unclassified Areas (category VI and "other")	2,248	122,080	692,723
Total Area Protected (all categories)	5,502	264,390	1,457,674
Marine and Littoral Protected Areas {a}	X	X	417,970
Protected Areas as a Percent of Total Land Area, 2003 {b}			
	6.0%	10.9%	10.8%
Number of Protected Areas, 2003	1,009	6,867	98,400
Number of Areas >100,000 ha, 2003	19	425	2,091
Number of Areas > 1 million ha, 2003	X	50	243
Wetlands of International Importance (Ramsar Sites), 2002:			
Number of Sites	1	X	1,179
Total Area (000 ha)	58	X	102,283
Biosphere Reserves, 2002			
Number of Sites	1	46	408
Total Area (000 ha)	131	X	439,000
Number and Status of Species			
Higher Plants			
Total known species (number), 1992-2002	4,715	X	X
Number of threatened species, 2002	119	X	5,714
Mammals			
Total known species (number), 1992-2002	274	X	X
Number of threatened species, 2002	27	X	1,137
Breeding Birds			
Total known species (number), 1992-2002	286	X	X
Number of threatened species, 2002	9	X	1,192



View more Country Profiles on-line at <http://earthtrends.wri.org>

Numerical Composition of Nigerian Flora

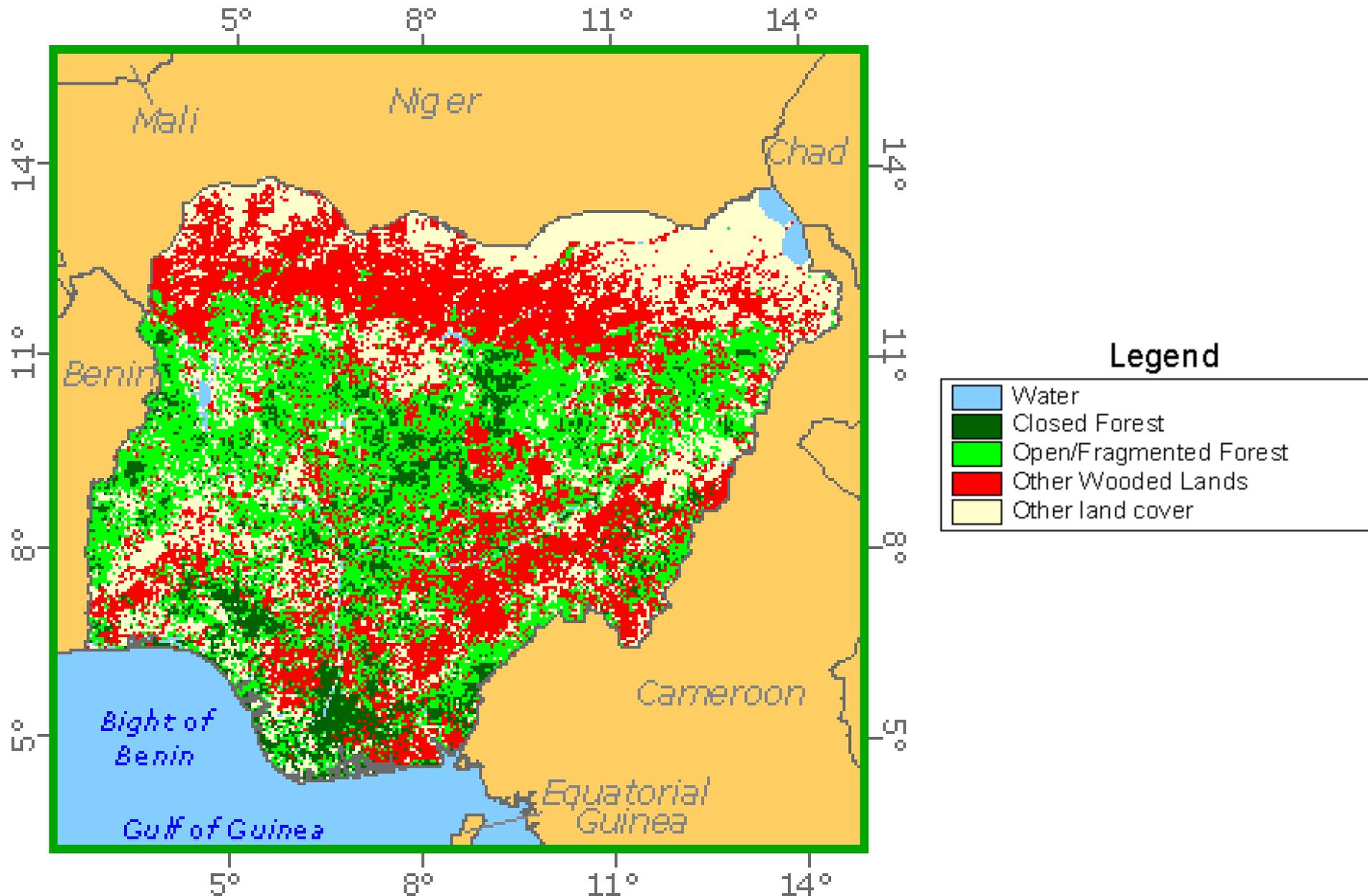
Group	Families	Genera	Species
Pteridophytes	????	????	????
Gymnosperms	????	????	????
Angiosperms	????	????	????
Dicotyledons	????	????	????
Monocotyledons	????	????	????
Total Angiosperms	????	????	????
Grand Total	????	????	4715



Monitoring Biodiversity Loss

- **Biodiversity refers to the number, variety and, variability of a living organism** (Larsson, 2001; Gaston, 2000).
- Recent data which indicates **current annual rate of species extinction** to be at least **100 to 1000 times the background rate of about 0.0001 %**; amounting to **extinction rate of 0.001 % to 0.1 % a year** (Senior et al., 2019; De Vos et al., 2014).
- This have **raised serious concerns especially for developing countries like Nigeria.**

Vegetation Status of Nigeria: Forest cover map



STATUS OF BIODIVERSITY IN NIGERIA

National Biodiversity Strategy And Action Plan 2016-2020

- CHAPTER TWO 2.0. STATUS OF BIODIVERSITY IN NIGERIA 6
- 2.1. Values of Biodiversity and Ecosystem in Nigeria and their Contribution to Human Well-being 10
- 2.1.1 Value of Non Timber Forest Products (NTFPs) 10
- 2.1.2. Biodiversity and Ecotourism 11
- 2.1.3. Wetlands and Marine Biodiversity 11
- 2.1.4. Cultural and Aesthetic Values of Biodiversity 12
- 2.2. Causes and Consequences of Biodiversity Loss 12
- 2.2.1. High Population Growth Rate 13
- 2.2.2. Poverty 13
- 2.2.3. Policy and Legislation Constraints 13

- **NOTE: NO PROVISION FOR EXPLORATION FOR NEW SPECIES AND RESEARCH FOR RECORD UPDATES**

What is Flora?

FLORAS

A **descriptive account of all plants found** in a given region (**country, state, city, town, village**) arranged according to a **particular system of classification** (e.g. **Angiosperm Phylogeny Group (APG) System**)

Global Flora

World Checklist of Selected Plant Families

World Checklist of Selected Plant Families (WCSP)

Quick Search

Search for a family, genus, or genus plus species

Find name

- 🏠 Checklist Home
- Advanced Search
- Build a Checklist
- About the Checklist

Aldinia glechomoides Raf. === *Croton betulinus* Vahl

Aleurites. [Euphorbiaceae]

Aleurites laccifer (L.) Willd. === *Croton laccifer* L.

Angelandra. [Euphorbiaceae]

Angelandra Endl. === *Croton* L.

Angelandra elliptica (Geiseler) Baill. === *Croton ellipticus* Geiseler

Anisepta. [Euphorbiaceae]

Anisepta Raf. === *Croton* L.

Anisophyllum. [Euphorbiaceae]

Anisophyllum Boivin ex Baill. === *Croton* L.

Anisophyllum acutifolium Boivin ex Baill. === *Croton muricatus* Vahl

Anisophyllum scutelligerum Boivin ex Baill. === *Croton adenophorus* Baill.

- Names
- Geography
- Life-Forms
- Abbreviations
- Compilers & Reviewers
- How to make a contribution
- Contact us
- How to cite us
- World Checklist Publications
- F.A.Q.
- Terms of use
- Help

Aubertia Chapel. ex Baill. === *Croton* L.

Aubertia argentea Chapel. ex Baill. === *Croton noronhae* Baill.

Aubertia glandulosa Chapel. ex Baill. === *Croton chapelieri* Baill.

Banalia. [Euphorbiaceae]

Banalia Raf. === *Croton* L.

Barhamia. [Euphorbiaceae]

Barhamia Klotzsch === *Croton* L.

Barhamia essequiboensis (Klotzsch) Klotzsch === *Croton essequiboensis* Klotzsch

Barhamia hispida Klotzsch === *Croton niveus* Jacq.

Barhamia macrostachya Klotzsch === *Croton niveus* Jacq.

Barhamia multiopocata (Vell.) Klotzsch === *Croton urticifolius* Lam.

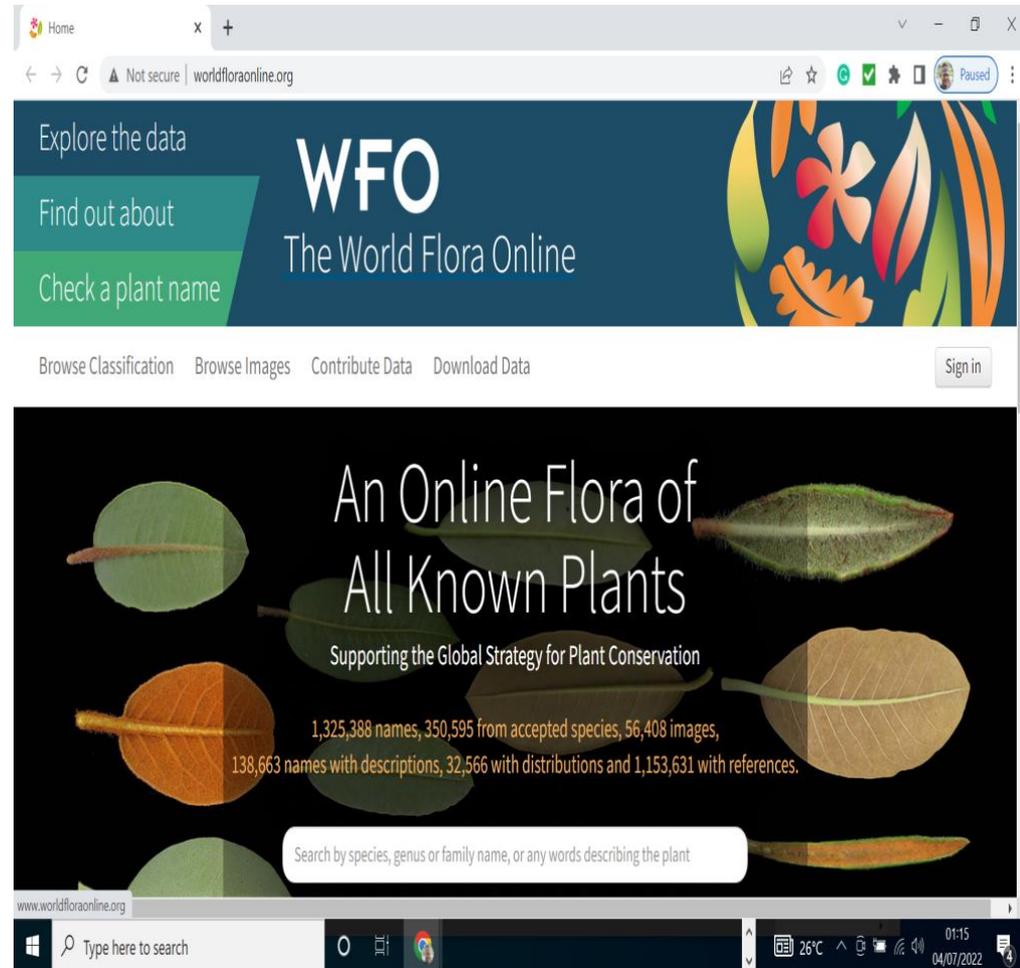
Barhamia ovalifolia (Vahl) Klotzsch === *Croton ovalifolius* Vahl

Barhamia panamensis Klotzsch === *Croton hircinus* Vent.

Barhamia urticifolia (Lam.) Klotzsch === *Croton urticifolius* Lam.

The World Flora Online

- **An Online Flora of All Known Plants**
- Supporting the Global Strategy for Plant Conservation
- **1,325,388** names, **350,595** from accepted species, **56,408** images
- **138,663** names with descriptions, **32,566** with distributions and **1,153,631** with references.



<http://www.worldfloraonline.org/>

Global Known Number of Plant species

- About **374,000 plant species currently known**, described and accepted
- Approximately **308,312 are vascular plants**, with **295,383 flowering plants** (angiosperms; monocots: **74,273**; eudicots: **210,008**).
- **Global numbers of smaller plant groups** are as follows: **algae ca 44,000, liverworts ca 9,000, hornworts ca 225, mosses 12,700, lycopods 1,290, ferns 10,560 and gymnosperms 1,079.**
- *Phytotaxa* is currently contributing more than a quarter of the ca 2000 species that are described every year, showing that it has become a major contributor to the dissemination of new species discovery.
- However, the rate of discovery is slowing down, due to reduction in financial and scientific support for fundamental natural history studies.

Numerical Composition of Global Flora (Vascular Plants)

Group	Families	Genera	Species
Pteridophytes	????	????	10,560
Gymnosperms	????	????	1,079
Dicotyledons		????	210,008
Monocotyledons		????	74,273
Total Angiosperms			295,383
Grand Total	285	????	308,312

Chritenhus, & Byng (2016)



Numerical Composition of Global Flora (Non Flowering Plants)

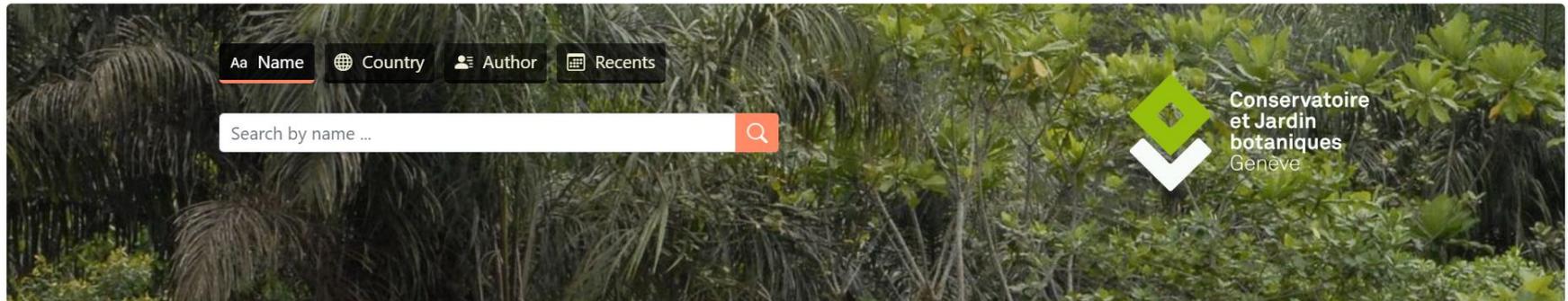
Group	Families	Genera	Species
Algae	????	????	ca 44,000
Liverworts	????	????	ca 9,000
Hornworts	????	????	ca 225
Mosses	????	????	12,700
Lycopods	????	????	1,290
Ferns	????	????	10,560
Gymnosperms	????	????	1,079
Grand Total	????	????	78,854

Critenhus, & Byng (2016)



Continent-wide Flora

African Plant Database



The database currently comprises **205983** names of african plants with their nomenclatural statuses. Data capture, edition and broadcast are the product of a collaboration between the [South African National Biodiversity Institute](#), the [Conservatoire et Jardin botaniques de la Ville de Genève](#), [Tela Botanica](#) and the [Missouri Botanical Garden](#).

Data are based on :

TA **Tropical Africa :**

J.-P. LEBRUN & A. L. STORK (1991-2015). Enumération des plantes à fleurs d'Afrique tropicale et Tropical African Flowering Plants: Ecology and Distribution, vol. 1-7. Conservatoire et Jardin botaniques de la Ville de Genève.

SA **Southern Africa :**

G. GERMISHUIZEN & N.L. MEYER, eds, (2003). Plants of Southern Africa: an annotated checklist Pretoria.

NA **North Africa :**

Activate Windows

Go to Settings to activate Windows.

Source: <https://africanplantdatabase.ch/>

An Analysis of the African Plant Checklist and Database

- **Up-to-date information on biodiversity is critical for the proper management and conservation of any area.**
- **Thus, the first step towards conservation should be to compile a species inventory or checklist.**
- **The project, for the first time, gives accurate statistics for the angiosperm flora of sub-Saharan Africa, comprising just over 50 000 flowering plant taxa and representing approximately 44 830 species.**
- **An inventory and database will not only be an invaluable tool for botanists working on the African flora, the combination will also serve most other biological disciplines.**
- **Furthermore, it has a key role to play in other projects and is proposed as a nomenclatural standard facilitating future botanical work on the continent, such as the African Plants Initiative**

An Analysis of the African Plant Checklist and Database

Table 1. General statistics for the angiosperms of Sub-Saharan Africa. S, Southern Africa, FSA region; T, Tropical Africa, EPFAT region; * includes discrepancies; ¹ does not include ² & ³.

	Monocots	Dicots	Total
Families	60	209	269
Current genera	762	3,040	3,802
Current taxa	10,879	39,257	50,136
Discrepancies	136	257	393
Taxa occurring in both S and T	1,284	3,366	4,650
Taxa occurring in S only	4,131	13,780	17,911
Taxa occurring in T only	5,464	22,111	27,575
Total number of taxa in S*	5,483	17,272	22,755
Total number of taxa in T*	6,816	25,608	32,424
Taxa naturalised in Sub-Saharan Africa ¹	165	1,256	1,421
Indigenous in T, naturalised in S ²	38	100	138
Indigenous in S, naturalised in T ³	9	33	42

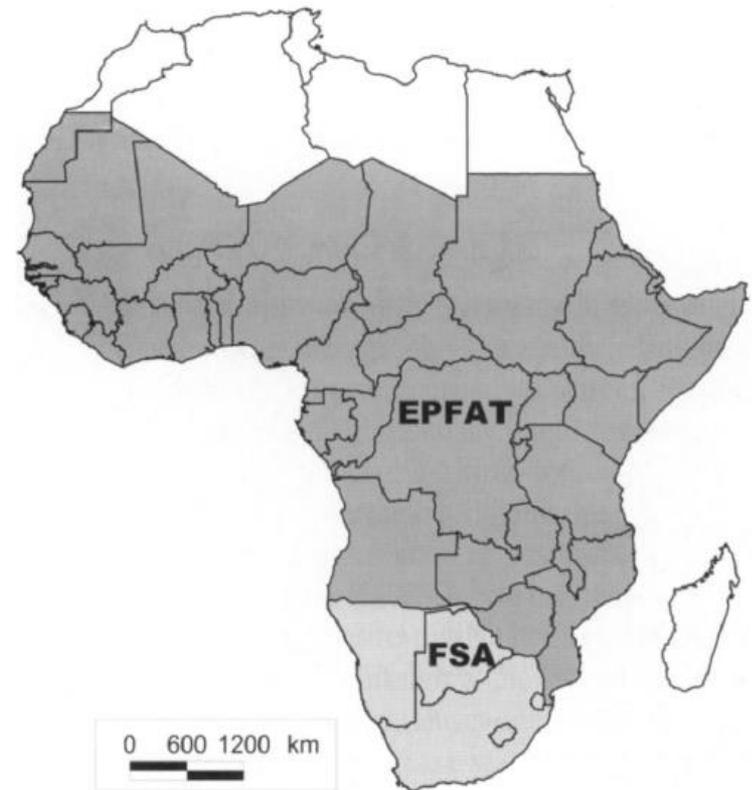


Fig. 1. Map showing the area covered by the APCD, as well as the areas of the two original datasets: *Flora of Southern Africa* (FSA) and *Enumération des Plantes à Fleurs d'Afrique Tropicale* (EPFAT).

Source: Klopper et al, 2006

A Third Of The Tropical African Flora Is Potentially Threatened With Extinction

- **IUCN Red List criteria**, is used a continental-scale preliminary conservation assessment of **22,036** vascular plant species in tropical Africa. Our results underline the **high level of extinction risk of the tropical African flora**.
- Thirty-three percent (33%) of the species are potentially threatened with **extinction**, and another third of species are likely rare, potentially becoming threatened in the near future.
- Four regions are highlighted with a high proportion (>40%) of potentially threatened species: Ethiopia, West Africa, central Tanzania, and southern Democratic Republic of the Congo.
- Approach represents a first step toward **data-driven conservation assessments applicable at continental scales providing crucial information for sustainable economic development prioritization**.

Flora of tropical Africa dataset

- Used a taxonomically verified database of tropical African vascular plant species distribution (RAINBIO):
- This database contains 590,231 geo-referenced records representing 25,222 native species in sub-Saharan Africa, excluding Madagascar and southern Africa.
- Only a small number of species whose risk of extinction has been fully assessed for the IUCN Red List partly reflects difficulties in accessing reliable specimen information.
- The primary limiting factor today is the time-consuming nature of conducting full assessments coupled with a lack of well-trained assessors.
- Estimated that the costs for the process of assessing a single species, from data compilation and verification to publication on the Red List, to be between \$30 and \$500 and takes on average one person/day of effort.

Source: Dauby et al., (2016), Stévant, et al., 2019,

Plate 1. The Plant Use categorization was sourced from PROTA



Plant Resources of Tropical Africa (PROTA)

Basic list of species and commodity grouping

- ORNAMENTALS
- AUXILLIARY PLANTS
- FORAGES
- MEDICINE
- SPICES & CONDIMENTS
- FRUITS
- VEGETABLES
- FIBRES
- VEGETABLE OILS
- CEREAL & PULSES
- STIMULANTS
- TIMBERS

Source: Bosch, et al., (eds), (2002).

Numerical Composition of Plants on PROTA's Database

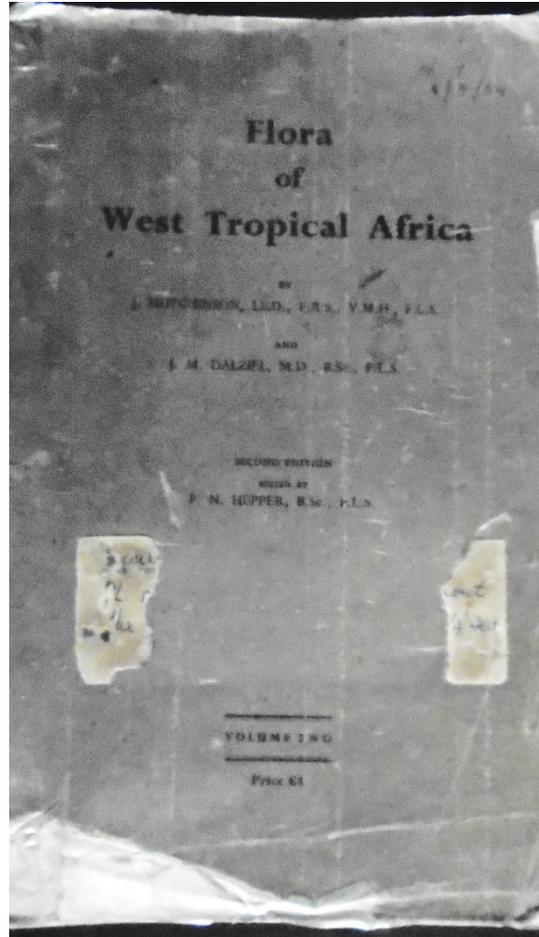
Group	Families	Genera	Species
Pteridophytes	????	????	????
Gymnosperms	????	????	????
Angiosperms	????	????	????
Dicotyledons	????	????	????
Monocotyledons	????	????	????
Total Angiosperms	????	????	????
Grand Total	????	????	6377

Source: Bosch, et al., (eds), (2002)
Plant Resources of Tropical Africa (PROTA).



Sub-Continental Flora

FLORA OF TROPICAL WEST AFRICA



FLORA OF WEST TROPICAL AFRICA

BY
J. HUTCHINSON, L.L.D., F.R.S., B.Sc., F.L.S.

AND
J. M. DALZIEL, M.D., B.Sc., F.L.S.

SECOND EDITION

REVISED BY
R. W. J. KEAY, M.A., B.Sc., F.L.S. (VOL I 1952)

REVISION EDITED BY
F. N. HEPPER, B.Sc., F.L.S. (VOL II 1963; VOL III 1968, 1972)

With annotations (marked APD) from

African Plants Database (version 3.4.0). Conservatoire et Jardin botaniques de la Ville
de Genève and South African National Biodiversity Institute, Pretoria.
Retrieved December 2013 from <http://www.ville-ge.ch/musinfo/bd/cjb/afriaca/>

PUBLISHED ON BEHALF OF THE GOVERNMENTS OF NIGERIA, THE GOLD COAST,
SIERRA LEONE AND THE GAMBIA

BY THE

CROWN AGENTS FOR OVERSEAS GOVERNMENTS
AND ADMINISTRATIONS

MILLBANK, LONDON, S.W.1

ENCEPHALARTOS Flora of West Tropical Africa CYCADACEAE

[Go to Family Keys >>>](#)

Gymnospermae

CYCADACEAE

Shrubs or small trees with thick, usually simple stems and a crown of pinnatisect leaves circinate in bud; leaflets often with spiny teeth. Cones dioecious. Males terminal or subterminal, composed of numerous leathery or fleshy flat or peltate scales bearing on the under-surface numerous pollen-sacs. Female cones similar, the scales bearing a pair of inverted nude ovules on the lower side. Seeds large, drupe-like, with copious endosperm; cotyledons 2.

Mainly found in S. Africa, Australia and Central America.

The most ancient of the families of Gymnosperms, only one species represented in our area.

ENCEPHALARTOS

Lehm.—F.T.A. 6, 2: 346. *APD acc*

1 Stem very short, ellipsoid; leaves pinnatisect, 1–2 m. long, up to about 25 cm. wide; segments up to about 80 pairs, linear-lanceolate, very acute, with a few spinulose teeth on the margin, and numerous close parallel nerves; male cones pedunculate, pale green, 30–40 cm. long including the stalk; female cones subsessile, up to 25 cm. long; seeds crimson when ripe. [Barter](#)

Encephalartos barteri Carruth.—F.T.A. 6, 2: 348; Bot. Mag. t. 8232; Pilger in E. & P. Pflanzenfam. 13: 80 (1926); Chev. Fl. Viv. 1: 3. *APD acc*

Stem rarely over 1 ft. high and 9 in. across, covered with persistent leaf-bases clothed with cottony indumentum.

C. C. Kwan Chapp 624! Labolabo Anderson! Upper Volta Schoof! *Togo*: fide Pilger l.c. *Dah.*: Borgu Prov. Poissou. Savalou Chev. N. Nig.: rocky valley 3 miles S. of Jebba Barter 1692! N. of Ilorin by Jebba Road (fr. Dec.) Meakle 870!

PODOCARPACEAE

Trees, or shrubby in some species; leaves persistent, alternate or opposite, or absent and represented by phylloclades, very variable from acicular to broadly lanceolate. Plants dioecious or monoecious; male flowers in terminal or axillary strobili, the stamens usually many, the anthers 2-celled; female flower solitary, or paired, axillary or terminal, or in strobili with megasporophylls 1-ovuled and bracteate; seed solitary, or paired; cotyledons 2.

A family of 7 genera, largely of the southern hemisphere.

PODOCARPUS

L'Hérit. ex Pers.—F.T.A. 6, 2: 339.

Dioecious, very rarely monoecious; leaves alternate (in our species); ovule adnate to the face of the fertile scale and usually much exceeding it, inverted, and enclosed in a false aril (epimatium) arising from the face of the scale and adnate to the single integument.

1 Receptacle well-developed, fleshy, finally bright red, obconical to subglobose, 15–18 mm. long, 15–20 mm. broad at the broadest point, with a pair of seeds (or sometimes only 1), at the distal end; seeds subglobose, 8–9 mm. diam.; leaves linear-lanceolate, 5–10 cm. long, 6–16 mm. broad, with stomata on one side of the leaf only. [L. microdon](#)

Activate
Go to Setti

FLORAS

FLORA OF WEST TROPICAL AFRICA

BY
J. HUTCHINSON, L.L.D., F.R.S., B.Sc., F.L.S.

AND
J. M. DALZIEL, M.D., B.Sc., F.L.S.

SECOND EDITION

REVISED BY
R. W. J. KEAY, M.A., B.Sc., F.L.S. (VOL I 1952)

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PUBLISHED ON BEHALF OF THE GOVERNMENTS OF NIGERIA, THE GOLD COAST,
SIERRA LEONE AND THE GAMBIA

BY THE

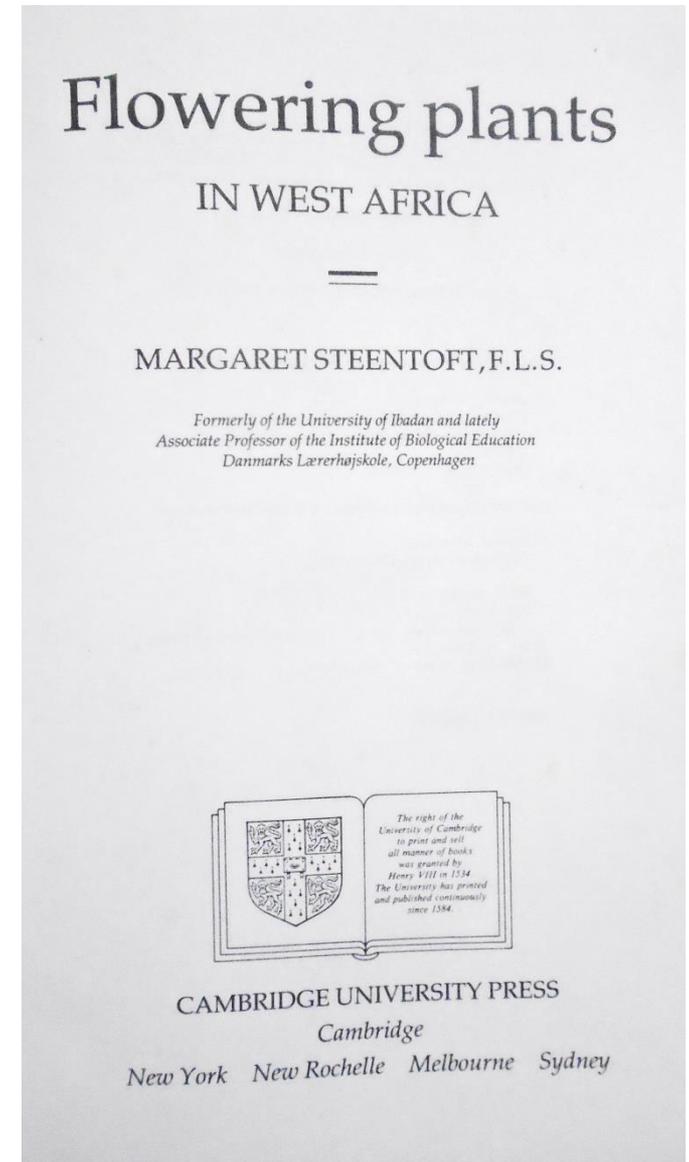
CROWN AGENTS FOR OVERSEAS GOVERNMENTS
AND ADMINISTRATIONS

MILLBANK, LONDON, S.W.1

Source:
Hutchinson & Dalziel (1972)



Source: Hawthorn and Jongkind (2006)



West African Plant Database – a photoguide and identification tool



West African Plants A PHOTO GUIDE



What are you looking for?



Browse & Search

Help & User's Guide

Project & Partners

Check Other Regions

Central African Plants

East African Plants

African Plants

Home

This interactive photographic guide shall help you to identify higher plants from West African ecosystems. It contains images of ferns and seed plants taken in the field. You can browse through a taxonomic hierarchy and / or search according to selected characters you observe on your plant.

Please cite this site as follows:

Brunken, U., Schmidt, M., Dressler, S., Janssen, T., Thiombiano, A. & Zizka, G. 2008. West African plants - A Photo Guide. www.westafricanplants.senckenberg.de. - Forschungsinstitut Senckenberg, Frankfurt/Main, Germany.

We welcome your contribution of instructive, well-determined plant images from that region. Please [contact](#) us!



Data base currently contains
37462 photos
3437 illustrated species
and had
909670 visits since 1 Aug 2008

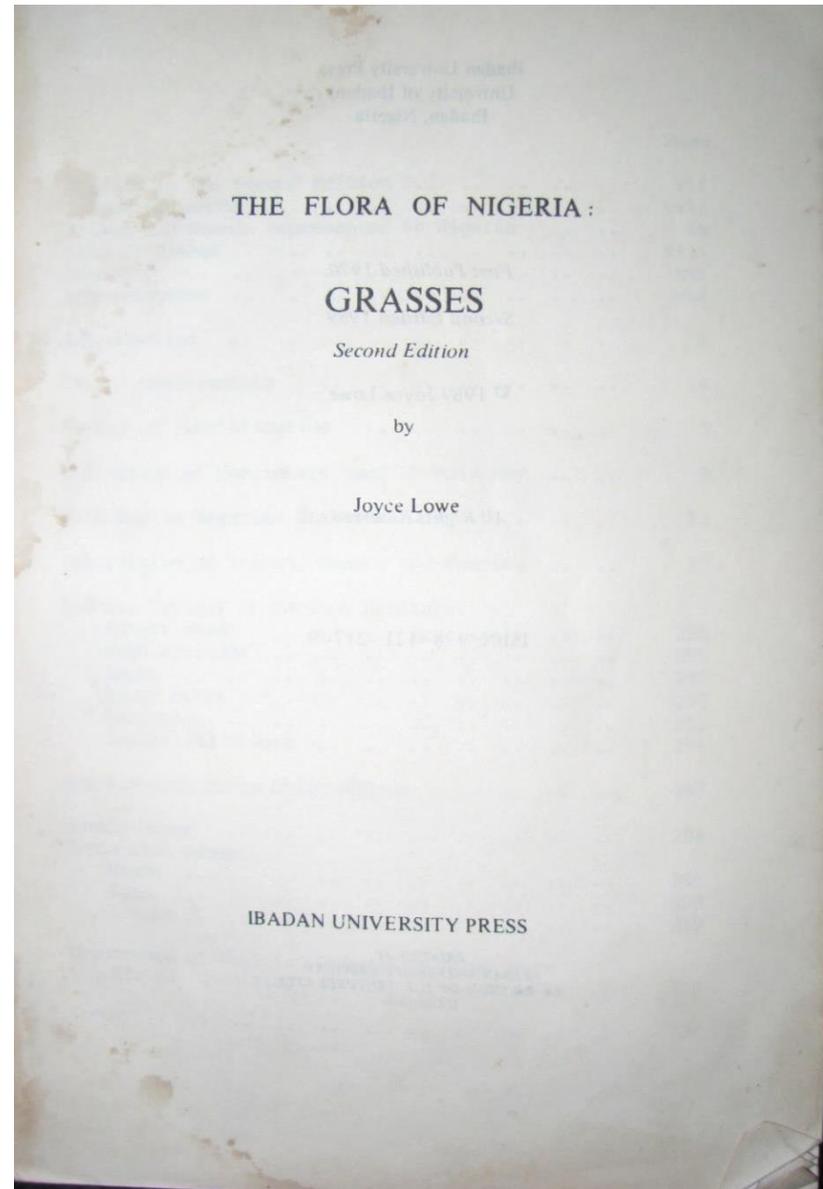
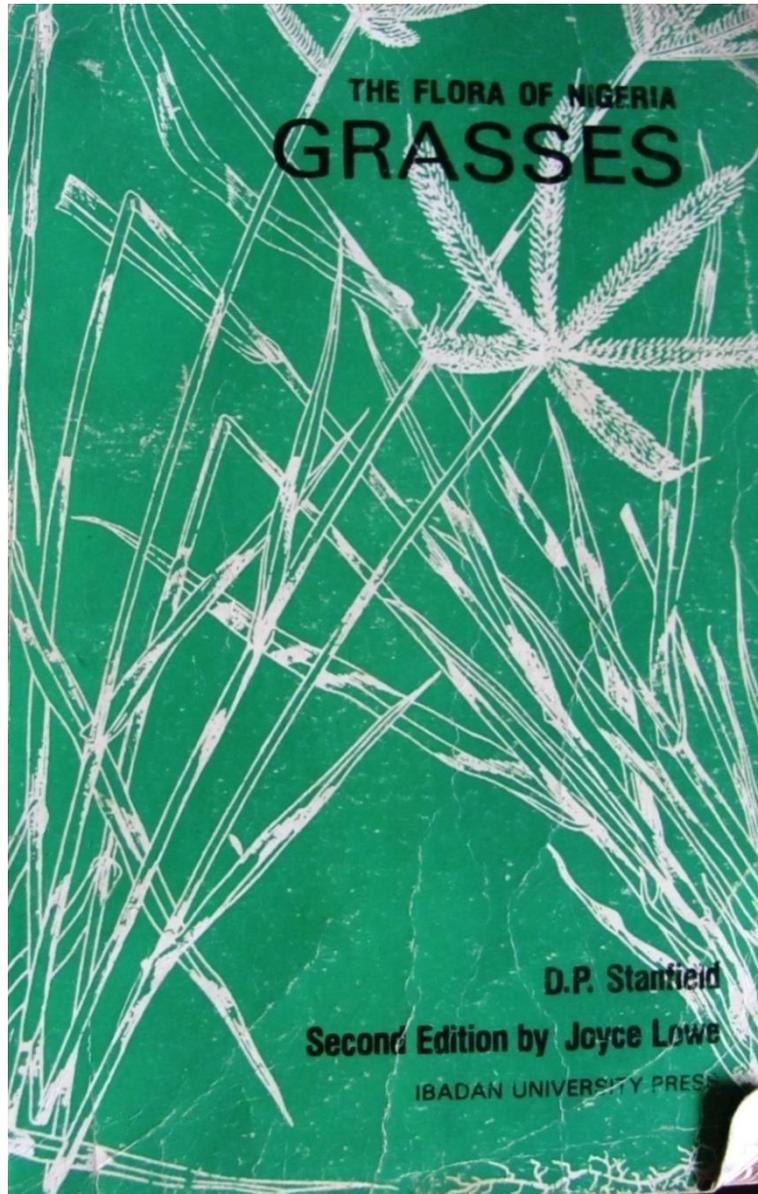
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National Flora

**NIGERIA HAS NO NATIONAL FLORA SOLELY
DEDICATED TO ALL PLANTS FOUND IN NIGERIA**

**All Plant Data Estimates For Nigeria Are
Extrapolated From Records found in the
Flora of West Tropical Africa**

The Flora of Nigeria: Grasses



Source: Joyce Lowe (1989)

Flora of Nigeria: Grasses by Stanfield (1970)



THE FLORA OF NIGERIA

Edited by D. P. Stanfield and Joyce Lowe

GRASSES

by

D. P. STANFIELD, Dip. Agric., F.L.S., M.B.E.
University of Ibadan

IBADAN UNIVERSITY PRESS

1970

Flore d'Oware et de Benin, en Afrique

PALISOT DE BEAUVOIS'S FLORE D'OWARE ET DE BENIN 43

PALISOT DE BEAUVOIS'S FLORE D'OWARE ET DE BENIN, EN AFRIQUE.

H. S. MARSHALL.

During the war through the courtesy of Messrs. Thomas Thorp, 149, High Street, Guildford, I had an opportunity of examining a copy of A. M. F. J. Palisot de Beauvois' Flore d'Oware et de Benin, en Afrique, bound in two volumes, with the original wrappers. Although several papers have been written on this important work, none of the authors apparently had seen a copy complete with all the original wrappers. It has therefore been thought worth while to place on record the contents of each part and the date of publication as printed on the wrappers. These are as follows :—

Premiere livraison.

I.	Favolus hirtus.	Guépier hérissé.
II.	Acrosticum stemmaria.	Acrostic hétérophyllé.
III.	Culcasia scandens.	Culcasie grimpanse.
IV.	Poa mucronata.	Paturin mucroné.
V.	Ompholocarpum procerum.	} Omphalocarpe géant.
VI.	Idem. Fruit.	

De l'Imprimerie de Fain Jeune et Compagnie.

A Paris.

Chez l'Auteur, rue du Parc, no. 511, au Marais. . . .

An XIII—1805.

Seconde livraison.

VII.	Stachygynandrum scandens.	Stachygynandre grimpanse.
VIII.	{ Killigia bulbosa	} Killigie bulbeuse.
	{ Microporus perula.	
IX.	Calamus secundiflorus	} Rotang à fleurs secondaires.
X.	Idem. Feuille.	
XI.	Myrianthus arboreus	} Myrianthe en arbre.
XII.	Idem. fruit.	

De l'Imprimerie de Fain Jeune et Compagnie.

A Paris.

Chez l'Auteur, rue du Parc, no. 511, au Marais. . . .

An XIII—1805.

Troisieme livraison.

XIII.	{ Ulva bulbosa.	} Ulve bulbeuse.
	{ Carpolepidum dichotomum	

**Catalogue of S. Nigerian Plants.
(British Mus. Nat. Hist. 17 pi. 1913.)**

Rendle, A. B., E. G. Baker, H. F. Wernham and S. Moore.
Catalogue of S. Nigerian Plants. (British Mus. Nat. Hist. 17 pl.
1913.)

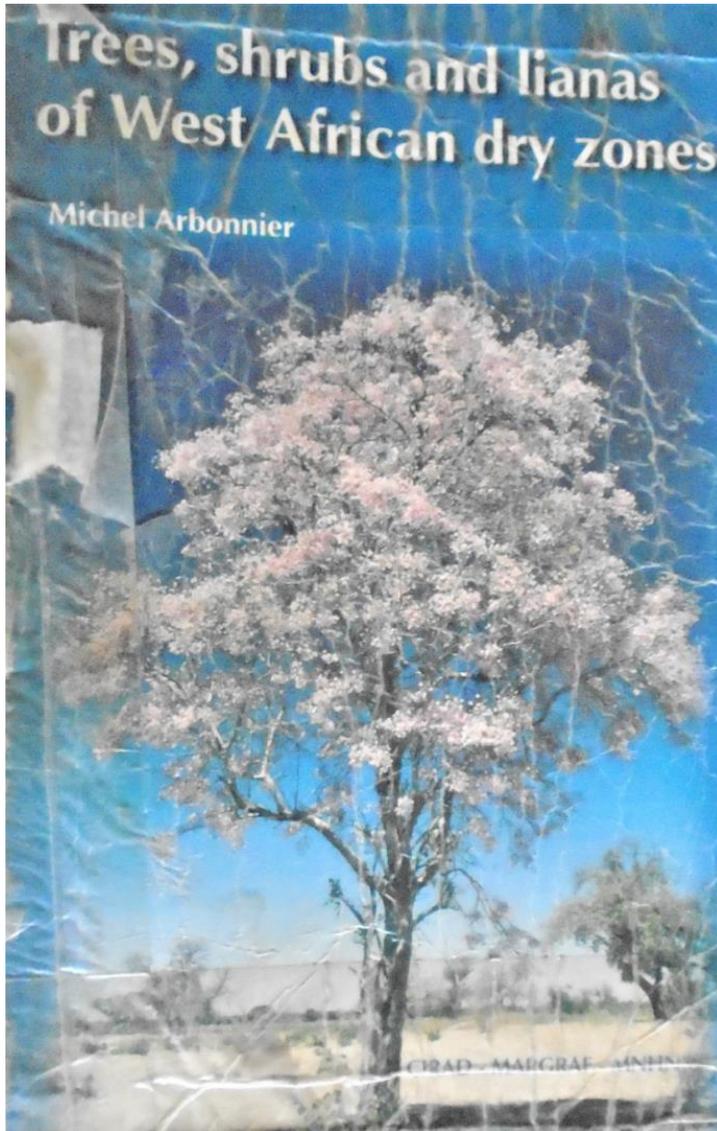
Major Attributes of a National Flora

- A **database of Checklist of Species** is generated from which other parameters including **conservation status** could easily be computed.
- The **numbers of genera, species and infra-specific taxa** are given for each family in the Nigerian flora, and compared to **previous estimates**.
- The **numbers of taxa recorded for Nigeria** can be compared to the numbers reported from other parts of Africa, and
- **The largest families and species richness in each area** of Nigerian Flora **can be** compared with other parts of the world.

Russell, G. E. (1985)

Regional Flora

Northern Nigeria

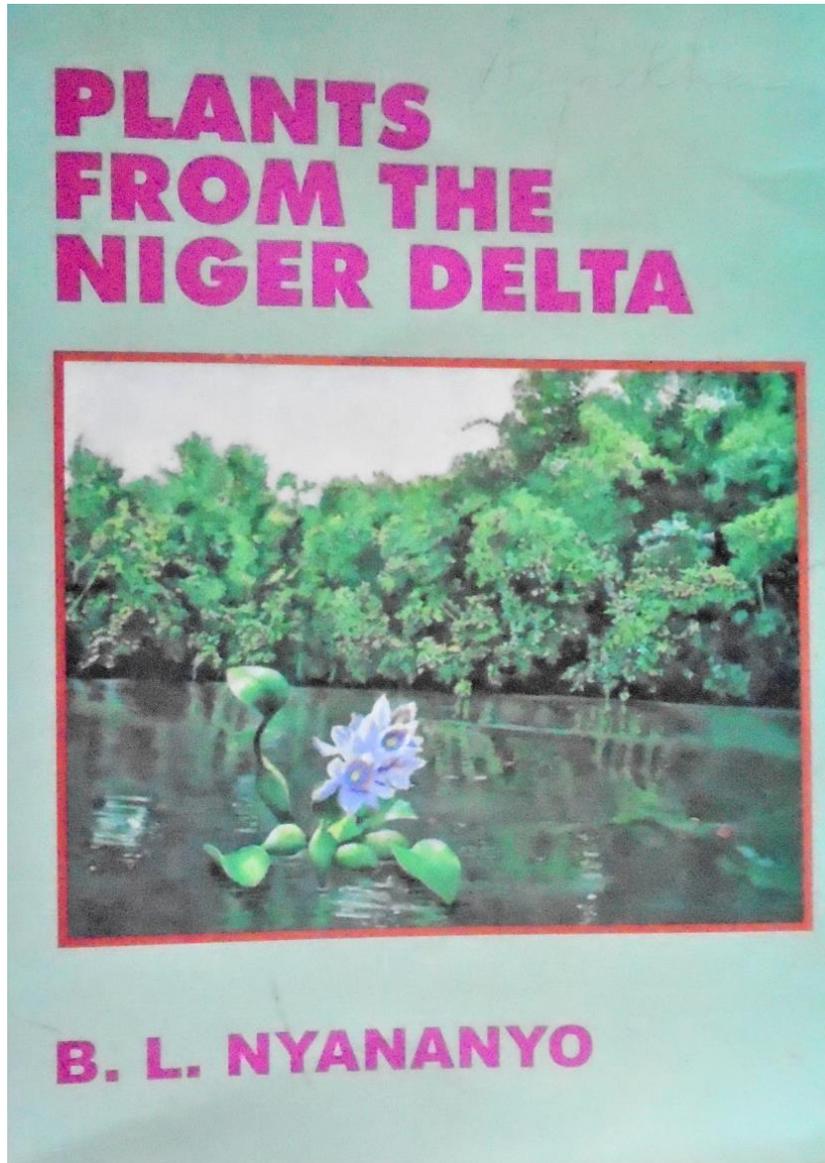


- **Ghazanfar, S. A. (1989). Savanna Plants of Africa: An Illustrated Guide.** MacMillan Publishers, Lagos. 227pp.
- **Hutchinson, J (1921). List of Plants Collected in Northern Nigeria by Captain A. W. Hill, 1921.** Bulletin of Miscellaneous Information (Royal Botanic Gardens, Kew), 1921 (6): 244-253.
- **Zhigila et al. "A GUIDE TO THE SAVANNA HERBACEOUS PLANTS" (In press)**
- This book covers 390 plant species distributed in 63 families comprising two fern, 16 monocot angiosperm, and 45 dicot angiosperm families; with 23 undetermined species.
- A handy resource guide for researchers and students in the sudan and sahelien regions of Nigeria and similar ecological zones.

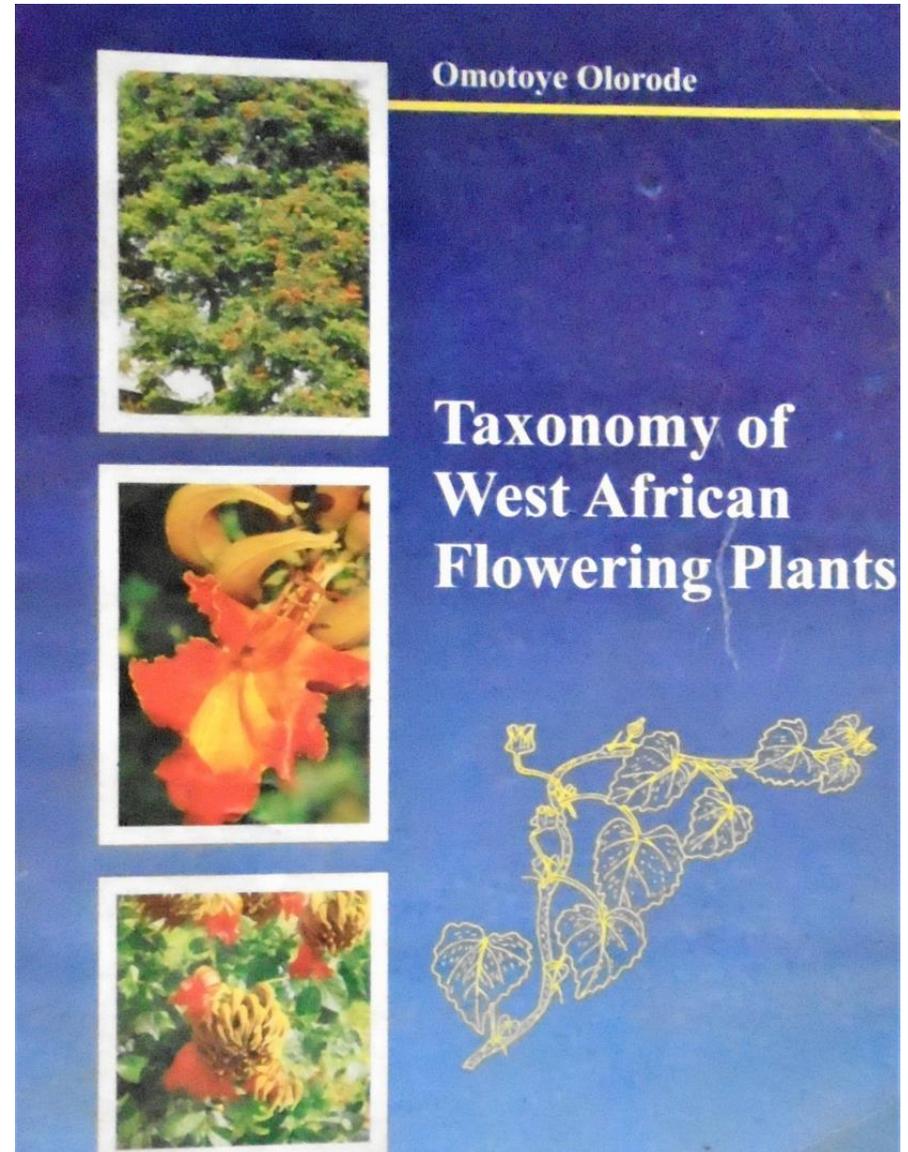
Source: Arbonnier, M. (2004)

Southern Nigeria

Selected Literature on Plants of Nigeria



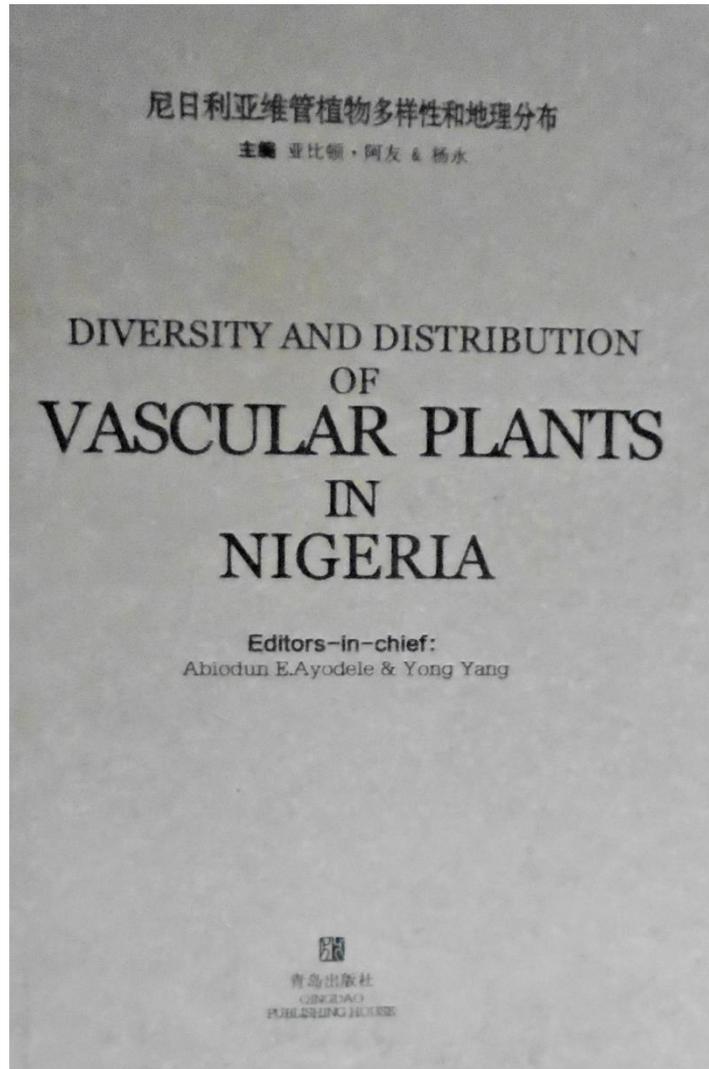
Nyananyo, B.L. (2006).



Olorode, O. (1984).

Checklists

Diversity and Distribution of Vascular Plants in Nigeria



Ayodele & Yang (2012)

- Nigeria harbors **rich diversity of vascular plants** having **285 families (42 ferns and fern allies, 5 gymnosperms, and 238 angiosperms), 1541 genera, and 5029 species (including 183 infraspecific taxa consisting of 45 subspecies, 133 varieties, and 5 forms).**
- The 243 seed plant families consist of 171 tropical families, 56 cosmopolitan families and 16 temperate families, the tropical elements are absolutely dominant.
- **Currently there is no single Flora of Nigeria.**
- **Despite the enormous sacrifice of time and money, earlier projects ended inconclusively.**
- **It therefore becomes imperative to start documenting the vast plant diversity and resources of the Nigerian ecosystem as a prelude to the preparation of a Flora for Nigeria which is detailed as much as possible and acceptable.**
- **This will assist in the knowledge of the plant diversity of Nigeria, enhance the preparation of adequate conservation strategy and consequently stem the loss of plant diversity.**

2014 - Southern Nigeria

ANNOTATED CHECKLIST OF VASCULAR PLANTS OF SOUTHERN NIGERIA

A Quick Reference Guide to the
Vascular Plants of Southern Nigeria: a systematic approach



Emmanuel Izaka Aigbokhan

- Listed **one thousand three hundred and twelve (1312) plant taxa** distributed in **141 plant families** are inventoried in this checklist.
- Using **FAO estimates**, this represents **28.52% of the estimated 4,600 vascular plant species in Nigeria** (FAO, 1995).
- Based on natural phylogenetic groupings, the distribution profile of plant family groups is as follows:
 - **Fern & Fern Allies 8 (5.80%),**
 - Gymnosperms 5 (3.62%),**
 - Paleoherbs 1 (0.7%),**
 - Magnolids 7 (5.07%),**
 - Monocotyledons 22 (15.94%) and**
 - Dicotyledons 95 (68.84%).**
- Based on phytogeography, the listed plants were distributed as follows: **native 891 (68.32%), Exotic 376 (28.83%), Endemic 7 (0.53%), Cosmopolitan 32 (2.45%) and Pantropic 7 (0.53%).**

Extractable Data from a National Flora using the Southern African Flora

Russell, G. E. (1985)

Numbers of taxa present in southern Africa

	No. families	No. genera	No. species	+ No. infrasp. taxa	= Species & infrasp. taxa	+ Unpubl. taxa	= Total species & infrasp. taxa
Bryophyta	88	291	821	0	821	5	826
Pteridophyta	28	74	251	17	268	5	273
Gymnospermae	6	6	43	0	43	0	43
Monocotyledonae	37	502	4 491	429	4 920	209	5 129
Dicotyledonae	163	1 794	15 881	1 803	17 684	121	17 805
Total	322	2 667	21 487	2 249	23 736	340	24 076
Non-seed plants	116	365	1 072	17	1 089	10	1 099
Vascular plants	234	2 376	20 666	2 249	22 915	335	23 250
Seed plants	206	2 302	20 415	2 232	22 647	330	22 977
Flowering plants	200	2 296	20 372	2 232	22 604	330	22 934

Source: Russell, G. E. (1985).

Numbers of naturalized and indigenous families, genera and species in southern Africa

	No. families	- No. naturaliz. families	= No. indigen. families	No. genera	- No. naturaliz. genera	= No. indigen. genera	No. species	- No. naturaliz. species	+ No. unpubl. species	= Total indigenous species
Bryophyta	88	0	88	291	0	291	821	0	5	826
Pteridophyta	28	1	27	74	4	70	251	9	5	247
Gymnospermae	6	1	5	6	1	5	43	6	0	37
Monocotyledonae	37	1	36	502	36	466	4 491	119	183	4 555
Dicotyledonae	163	8	155	1 794	189	1 605	15 881	514	21	15 388
Total	322	11	311	2 667	230	2 437	21 487	648	214	21 053
Non-seedplants	116	1	115	365	4	361	1 072	9	10	1 073
Vascular plants	234	11	223	2 376	230	2 146	20 666	648	209	20 227
Seedplants	206	10	196	2 302	226	2 076	20 415	639	204	19 980
Flowering plants	200	9	191	2 296	225	2 071	20 372	633	204	19 943

Source: Russell, G. E. (1985).

Some Literature on the Flora, Biodiversity and Conservation status of Nigeria

**Potential Template Sources for the
Compilation of the Flora of Nigeria**

Template for Compiling the Flora of Nigeria

Year	Author	Literature	Institution
1871.	Oliver, D.	Caesalpinieae. In: Oliver, D. (Editor). Flora of tropical Africa. Volume 2 pp. 258–321.	L. Reeve & Co, London, United Kingdom.
1912		Diagnoses Africanae: XLVII Source: Vol. 1912, No. 4 (1912), pp.191-197	Bulletin of Miscellaneous Information (Royal Gardens, Kew),
1920)	Unwin, A. H.	West African Forests and Forestry. 610p.	T. Fisher Unwin Ltd, Adelphi Terrace, London
1937	Dalziel, J. D.	The Useful Plants of West Tropical Africa: - being an Appendix to the FWTA . 612pp.	Crown Agents for then Colonies.
(1954)	Hutchinson, and Dalziel, J.M. Vol. I. Part 1., 295p. Vol. II, 1963, 544p. Vol. III. Part 1, 1968, 276p. Vol. III. Part 2. 1972, 298p.	Flora of West Tropical Africa.. 2 nd Ed. Vol. I&II, Revised by R. W. J. Keay; Vol. III. Part 1&2, Revised by F. N. Hepper.	Crown Agents for Overseas Governments and Administrations: London

Template Sources for Compiling the Flora of Nigeria

Year	Author	Literature	Institution
1957	Cooper, L.G.	Some Nigerian high forest trees.	Nigerian Field XXII (1): 21-36.
1963	Graham, V. E.	Tropical Wild Flowers. 200p.	Hulton Educational Publications, London.
1965	Hepper, F. N.	Numerical Analysis of the 'Flora of West Tropical Africa': I: Pteridophytes, Gymnosperms, Angiosperms (Dicotyledons).	Kew Bulletin 19 (3): 443-450.
1969	Hopkins, B. I. 1969 III. 1970. IV. 1970	The Olokemeji Forest Reserve I. The general history of the area III. Natural History. IV. Checklists	The Journal of the Nigerian Field Society, Vol. XXXIV (3): 115 – 126.; III. Vol. XXXV (2): 54 – 77.; IV. XXXV (3): 123 – 144.
1972	Hepper, F. N.	Numerical Analysis of the 'Flora of West Tropical Africa': II: Angiosperms (Monocotyledons)	Kew Bulletin, 27(2): 305-307.
1972	Gledhill, G.	West African Trees. West African Nature Handbook.	Longman Group Limited Essex.

Template for Compiling the Flora of Nigeria

Year	Author	Literature	
1980	Gbile, Z.O. (1980).	Vernacular Names of Nigerian Plants (Hausa), 63p.	Forestry Research Institute of Nigeria (FRIN).
1981	Hopkins,	Forest and Savanna. Second Edition. 154p.	English Book Society and Heinemann
1984	Gbile, Z.O. (1984).	Vernacular Names of Nigerian Plants (Yoruba), 101p.	FRIN
1985	Burkill, H.M.. Vol. 1 (1985), Families A-D; Vol. 2 (1994), Families E-I; Vol. 3, (1995), Families J-L; Vol. 4, (1997), Families M-R, Vol. 5, (2000), Families S-Z, General Index (2004).	The Useful Plants of West Tropical Africa.	Kew: Royal Botanic Gardens.

Template for Compiling the Flora of Nigeria

Year	Author	Literature	Institution
1987	Akobundu & Agyakwa, (1987, 1998), Akobundu et al., 2016).	A Handbook of West African Weeds. Second & Third Edition. 565p.	International Institute of Tropical Agriculture (IITA)
1988.	Gill, L.S.	Taxonomy of Flowering Plants. 338p.	University of Benin
1989	Ghazanfar, S. (1989).	Savanna Plants – An Illustrated Guide. 227p.	Macmillan Publishers
1995	FAO: M.B. Sarumi, M.B. et al., (eds.).	Nigeria: Country report to FAO International Technical Conference on Plant 108p.	Food and Agriculture Organization (FAO):Genetic Resources (Leipzig,1996).
1992-1994	Gill, L.S. (1992).	Ethnomedical Uses of Plants in Nigeria. 276p.	University of Benin

Template for Compiling the Flora of Nigeria

Year	Author	Literature	Institution
2000-2009	FMEnv, (2001).	Nigeria First National Biodiversity Report, 42pp.	Federal Ministry of Environment (FMEnv), Abuja.
2002	Bosch, et al., (eds).	Basic list of species and commodity groupings. 341p.	Plant Resources of Tropical Africa (PROTA)
2004	Arbonnier, M.	Trees, Shrubs and Lianas of West African Dry Zones. 572p.	
2006	Hawthorn, W. and Jongkind, C.	Woody Plants of West African Forests: A guide to the forest trees, shrubs and lianas from Senegal to Ghana. 1023p.	Royal Botanic Gardens, Kew.
2006	Akinsulire, O.	Outlines and Pictures of Medicinal Plants from Nigeria.	University of Lagos

Template for Compiling the Flora of Nigeria

Year	Author	Literature	Institution
2007	Blench R.and Dendo M.	Hausa names for plants and trees. Draft Circulation Version, 77pp.	Cambridge
2008	Gledhill, D.	The Names of Plants (4 ed.). 426p.	Cambridge University Press.
2012	Ayodele, A. E. & Yang, Y. (eds). p350.	Diversity and Distribution of Vascular Plants in Nigeria.	Qingdao Publishing, China
2014	Aigbokhan, E.I.	Annotated Checklist of Vascular Plants of Southern Nigeria 346p.	University of Benin

The protected areas: potential Sites for finding unique endemic species

- **National parks**
- **Game reserves**
- **Forest sanctuaries**
- **Sacred grooves**

FIRST NATIONAL BIODIVERSITY REPORT

JULY 2001

- **Biodiversity Information and Data Bank**
- Claimed that Nigeria has a fairly well developed body of **database(?)** on biodiversity **scattered(?)** in different sectorial agencies and non-governmental institutions.
- That the sectorial database needs to be **connected to a central node** in the Ministry of Environment.
- The Ministry is presently **in the process of establishing a viable network of information system.**

Source: FMEnv, (2001).

Biodiversity Assessment :

- **Country Study:** The Biodiversity Country Study of 1992 described the status of biodiversity conservation in Nigeria.
- **Biodiversity Surveys:** surveys have been utilized in the preparation of the following Conservation Strategies and Action Plans.
 - (a) National Conservation Strategy – 1985
 - (b) Natural Resources Conservation Action Plan – 1992
 - (c) National Biodiversity Strategy and Action Plan – 1998
 - (d) State Environmental Strategy and Action Plan – 1997.

Source: FMEnv, (2001).

Threatened Biodiversity Species in Nigeria (2001)

SPECIES	MAIN USES	STATUS
A. PLANTS		
<i>Milicea excelsia</i>	Timber	Endangered
<i>Diospyros elliotii</i>	Carving	Endangered
<i>Triplochiduiton scleroxylon</i>	Timber	Endangered
<i>Mansoiea altissinia</i>	Timber	Endangered
<i>Masilania accuminata</i>	Chewing stick	Endangered
<i>Garcina manni</i>	Chewing stick	Endangered
<i>Oucunbaca aubrevillei</i>	Trado-medical	Almost Extinct
<i>Erythrina senegalensis</i>	Medicine	Endangered
<i>Cassia nigricans</i>	Medicine	Endangered
<i>Nigella sativa</i>	Medicine	Endangered
<i>Hymenocardia acida</i>	General	Endangered
<i>Kigelia africana</i>	General	Endangered
B. ANIMALS		
<i>Crocodylus niloticus</i>	Food/medicine/bags	Endangered
<i>Osteolaemus tetraspis</i>	Food/medicine	Endangered
<i>Struthio camelus</i>	Food/medicine	Endangered
<i>Psittacus erithacus</i>	Medicine/pet	Endangered
<i>Cercopithecus erythrogaster</i>	Food	Endangered
<i>Loxodonta africana</i>	Food/Ivory	Endangered
<i>Trichecus senegalensis</i>	Food	Endangered
<i>Giraffa camelopedalus</i>	Food/medicine	Endangered
<i>Python sabae</i>	Bags	Endangered
<i>Gazella dorcas</i>	Food	Endangered

Source: FMEnv, (2001).



Spelling errors .. A red flag on the technical expertise of the compilers

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- **5. Professor Gamaniel Shingu**
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- **9. Dr. Gbadebo Osemeobo**
- **10. Mr. John Mshelbwala**
- **11. Sarumi**
- **12. Mr. Victor Ojogbo**
- **13. Comfort Owolabi (Mrs)**
- **14. Ms Anne Ene-Ita**

Source: FMEnv, (2001).

Categories of biodiversity related sites in Nigeria

- **Species statistics showed that Nigeria has an endemic flora of 91 species belonging to 44 families with Rubiaceae accounting for the highest numbers.**
- **The categories of biodiversity related sites in Nigeria include:**
 - **7 National Parks of Old Oyo, Cross River, Gashaka-Gumti, Okomu, Chad Basin, Kainji Lake, and Kamuku;**
 - **27 Important Bird Areas including all National Parks and 60% the Ramsar sites;**
 - **11 Ramsar Sites;**
 - **2 World Heritage Sites of Sukur Kingdom and Osun Osogbo Grove;**
 - **994 Forest Reserves;**
 - **32 Game Reserves;**
 - **1 Biosphere Reserve; and many Sacred groves at varied level of protection.**

Source: FMEnv, (2015).

2005 - GLOBAL FOREST RESOURCES ASSESSMENT COUNTRY REPORTS - NIGERIA FRA2005/196 Rome,

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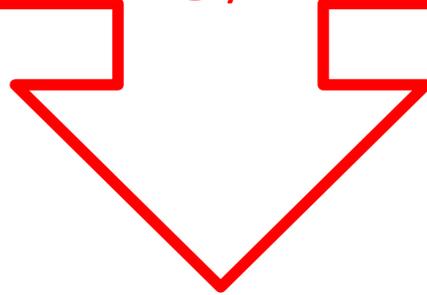
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The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The Global Forest Resources Assessment 2005 Country Report Series is designed to document and make available the information forming the basis for the FRA 2005 reports. The Country Reports have been compiled by officially nominated country correspondents in collaboration with FAO staff. Prior to finalisation, these reports were subject to validation by forestry authorities in the respective countries.

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For a nation abound with many professors and universities, this national report was prepared by an individual with no title, fix organization, fixed address, or official email address.

Source: FRA (2005)

What is Conservation status?

Conservation status

- According to Wikipedia, the **conservation status** of a group of organisms (for instance, a species) **indicates whether the group still exists and how likely the group is to become extinct in the near future.**
- **Many factors** are taken into account when **assessing conservation status**:
 - not simply the **number of individuals** remaining, but the
 - **overall increase or decrease** in the **population over time, breeding success rates, and known threats.**
- **Various systems of conservation status exist** and are in use at **international, multi-country, national and local levels** as well as for consumer use.

A Research Study on Conservation Status

Conservation status of the vascular plants in East African rain forests

Dissertation

Zur

Erlangung des akademischen Grades

eines

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Erlangung des akademischen Grades (2011).

Need for Species conservation assessments

- To systematically determine the conservation status of a species.
- There are many different types of assessments that can be undertaken at a variety of scales and with a variety of methods,
- but they all essentially aim to determine how likely it is that a species will go extinct in the near future.

Conservation Status Assessments

- The **primary purpose** of **Conservation Status Assessments** is **to evaluate potential extinction** (species), **elimination** or **extirpation risk of elements of biodiversity** (species, communities, and systems), including regional extinction or extirpation risk.
- **Risk is an essential piece of information** to inform biodiversity conservation. However, it **must be used with other information** (e.g., genetic distinctness, importance of area, immediacy of threats, inclusive benefits, feasibility) to guide **conservation planning, priority setting for reserve selection, inventory, official national and subnational** (i.e., listings, and recovery and management planning).

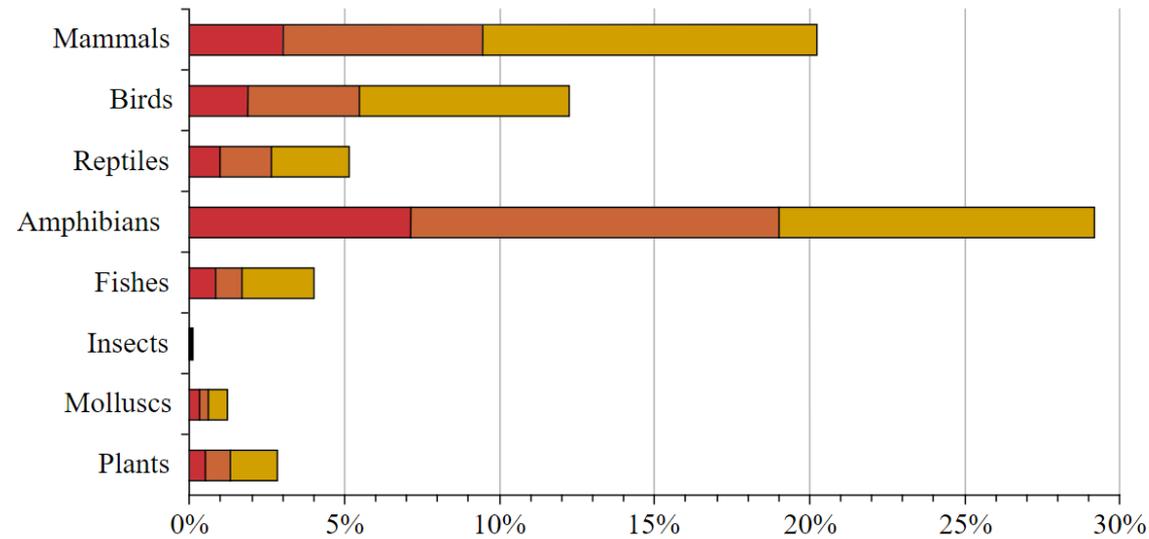
Conservation Status Assessments: Factors for Evaluating Species and Ecosystem Risk

- **Primary Goal:** To assess the conservation status of species and ecosystems—specifically the extinction risk of species and elimination risk of ecosystems at global scales, and their extirpation risk at national and subnational (e.g., state, province, territory) scales—using standard methods.
- **NatureServe** and its network program staff across **North America collect and evaluate data for species and ecosystems of concern using these methods and tools to ensure that assigned status ranks are accurate and consistent, based on current field and remote sensing information.**

Conservation Status Assessments: Methodology for Assigning Ranks

- **Primary Goal:** To assess the conservation status of species and ecosystems—specifically the extinction risk of species and elimination risk of ecosystems at global scales, and their extirpation risk at national and subnational (e.g., state, province, territory) scales—using standard methods.
- **NatureServe and its network program staff across North America** collect and evaluate data for species and ecosystems of concern using these methods and tools to ensure that assigned status ranks are accurate and consistent, based on current field and remote sensing information

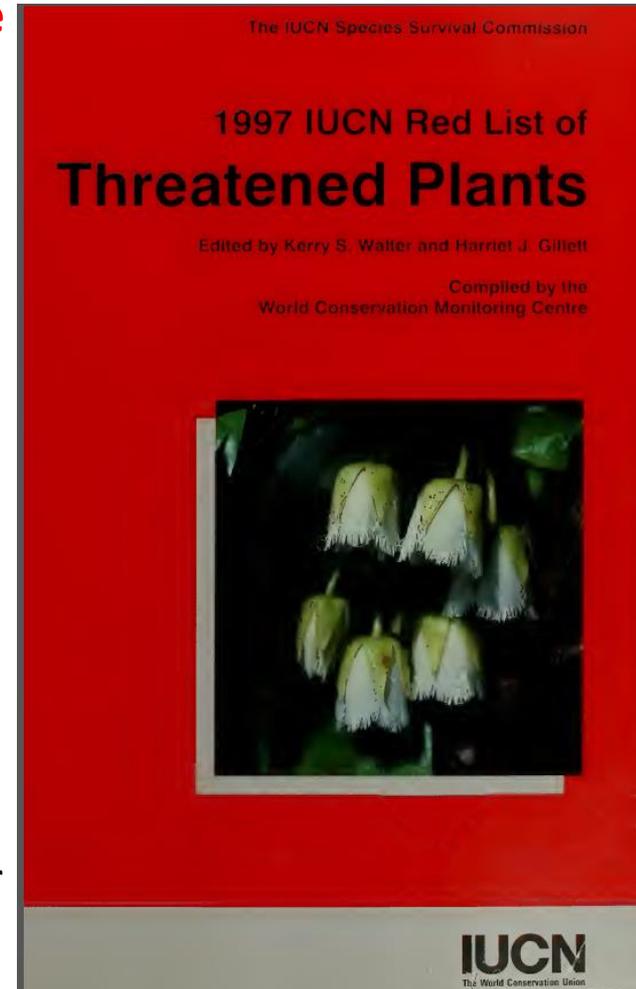
Globally, fewer plant taxa are threatened compared to animals



Source: iucnredlist.org (online 1998).

National Botanical Institute (NBI), South Africa

- The mission of the NBI is **to promote the sustainable use, conservation, appreciation and enjoyment of the exceptionally rich plant life of South Africa**, for the benefit of all its people.
- The NBI **grows more than 10,000 indigenous plant species in eight National Botanical Gardens**, located country-wide, providing an exceptional amenity and educational focus for local and overseas visitors alike.
- The **research activities** of the Institute, which focus on the **systematics, ecology, conservation, ethnobotany and horticulture of southern Africa's plants**, are conducted from **three research centres**. These centres include **three herbaria** which together **house 1.8 million specimens**. The
- Institute also **develops and maintains databases on plant diversity for use in conservation and development activities**.



Source: Walter & Gillett [eds] (1998).

1997 IUCN Red List of Threatened Plants.

- This western hemisphere **data set forms a major contribution to the 1997 IUCN Red List of Threatened Plants.**
- Mainly incorporates the **conservation status** and **geographic distribution** of **many western hemisphere plants** have been **assessed** and **documented** by multi-institutional effort, includes a **comprehensive listing of threatened plants of the United States and Canada.**

Tools and Procedures for the Assessment of Conservation Status: IUCN Red List

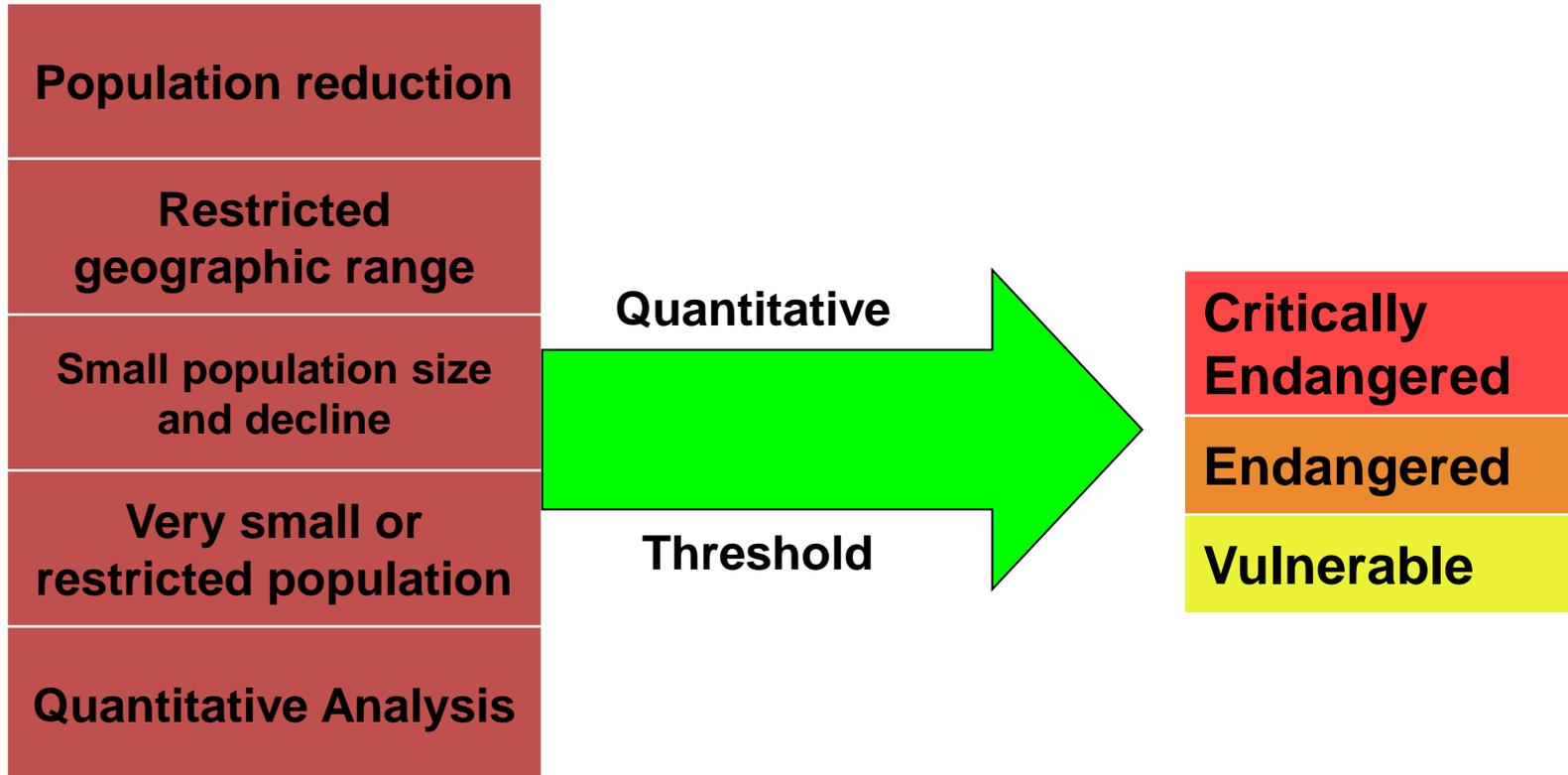
- The International Union for Conservation of Nature (IUCN) Red List of Threatened Species, founded in 1964, is the
- World's most comprehensive inventory of the global conservation status of biological species.
- Extinction risk of thousands of species and subspecies determined by the use of a set of precise criteria.
- Criteria are relevant to all species and all regions of the world.
- With its strong scientific base, the IUCN Red List is recognized as the most authoritative guide to the status of biological diversity.
- A series of Regional Red Lists are produced by countries or organizations, which assess the risk of extinction to species within a political management unit.

Source: Walter & Gillett [eds] (1998).

The IUCN Red List Categories and Criteria



The IUCN Redlist Criteria for Critically Endangered, Endangered and Vulnerable.



Adapted from: IUCN (2012).

CRITERION A

- **A. Population size reduction. Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4**

	Critically Endangered	Endangered	Vulnerable
A1	$\geq 90\%$	$\geq 70\%$	$\geq 50\%$
A2, A3 & A4	$\geq 80\%$	$\geq 50\%$	$\geq 30\%$

Based on any of the following, Criterion A1, A2, A3, A4 are applied:

- (a) direct observation [except A3]
- (b) an index of abundance appropriate to the taxon
- (c) a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality
- (d) actual or potential levels of exploitation
- (e) effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.

Adapted from: IUCN (2012).

CRITERION A. contd.

- A1 Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction are clearly reversible AND understood AND have ceased.
- A2 Population reduction observed, estimated, inferred, or suspected in the past where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.
- A3 Population reduction projected, inferred or suspected to be met in the future (up to a maximum of 100 years) [(a) cannot be used for A3].
- A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.

Adapted from: IUCN (2012).

CRITERION B

- B. Geographic range in the form of either B1 (extent of occurrence) AND/OR B2 (area of occupancy)**

	Critically Endangered	Endangered	Vulnerable
B1. Extent of occurrence (EOO)	<100km ²	<5,000km ²	<20,000km ²
B2. Area of occupancy (AOO)	<10km ²	<500km ²	<2000km ²

- (a) **Severely fragmented OR**
Number of locations

=1	≤5	≤10
-----------	-----------	------------

- (b) **Continuing decline observed, estimated, inferred or projected in any of:** (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals

- (c) **Extreme fluctuations in any of:** (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals

Adapted from: IUCN (2012).

CRITERION C

- C. Small population size and decline**

	Critically Endangered	Endangered	Vulnerable
Number of mature individuals	<250	<2500	<10,000

- AND at least one of C1 or C2

C1. An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation	20% in 5 years or 2 generations	10% in 10 years or 3 generations
--	---------------------------------------	--	---

following 3 conditions:

- a) (i) Number of mature individuals in each subpopulation
- (ii) % of maturated in one subpopulation
- (b) Extreme fluctuations in

≤50	≤250	≤1000
90–100%	95–100%	100%

Adapted from: IUCN (2012).

CRITERIA D & E

- D. Very small or restricted population**

	Critically Endangered	Endangered	Vulnerable
Number of mature individuals	<50	<250	D1. < 1,000
D2.Restricted area of occupancy or number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time.	-	-	D2. typically: AOO < 20 km ² or number of locations ≤ 5

- E. Quantitative Analysis**

	Critically Endangered	Endangered	Vulnerable
Indicating the probability of extinction in the wild to be:	50% in 10 years or 3 generations, (100 years max.)	20% in 20 years or 5 generations, (100 years max.)	10% in 100 years

Adapted from: IUCN (2012).

EXAMPLE:

- **CR A2ace;B1ab(iii)**
- Critically endangered,
- A. Population size reduction $\geq 80\%$ based on (a) direct observation, (c) decline in AOO, EOO and/or habitat quality and (e) effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.
- B. EOO $< 100\text{km}^2$ AND (a) severely fragmented OR Number of locations and (b) continuing decline observed, estimated, inferred or projected in (iii) area, extent and/or quality of habitat.

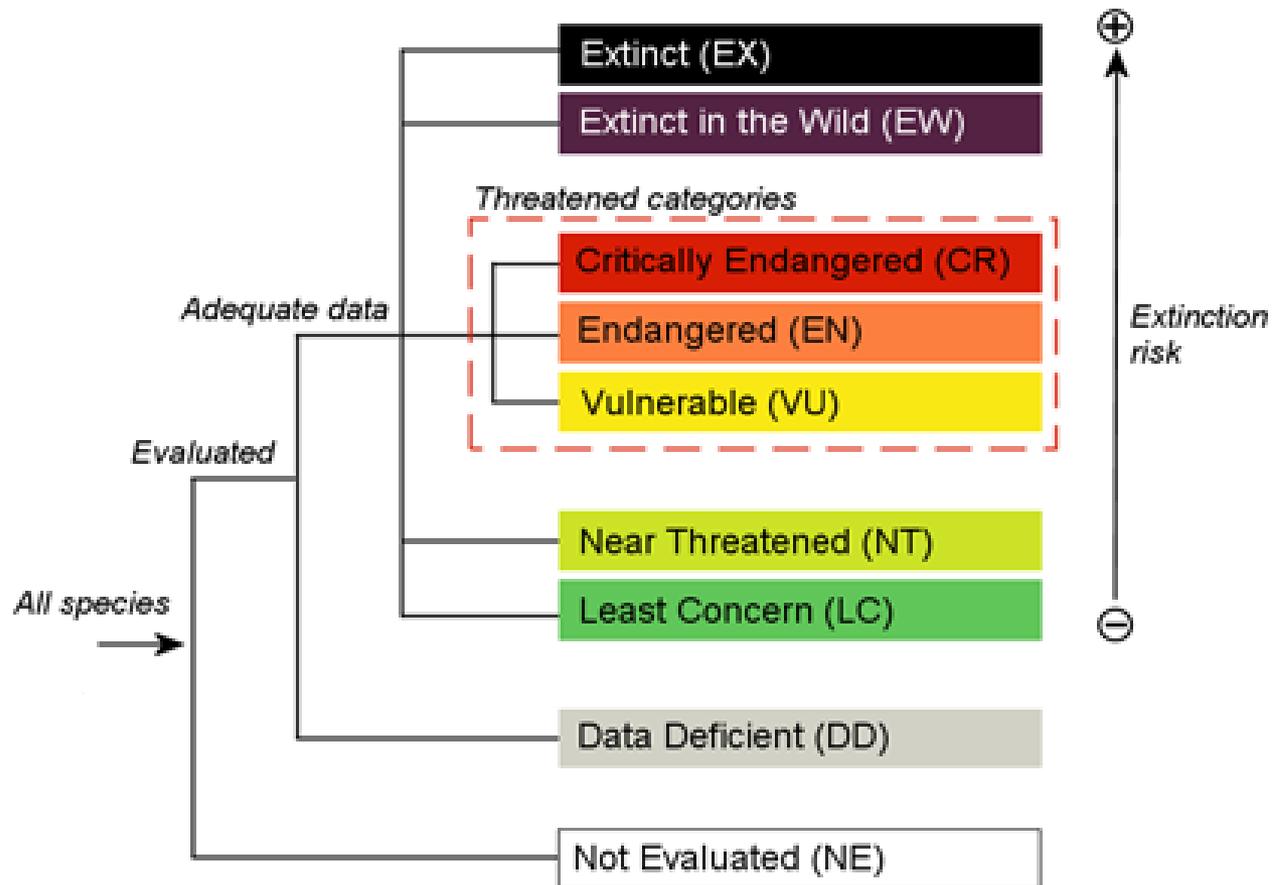


Figure 1: Structure of the IUCN Red List Categories of conservation status of species.
Source: (Vie *et al.*, 2008).

The International Union for conservation of nature (IUCN) Red list provides a tool used to assess and measure the likelihood of a species becoming extinct.

The screenshot shows the IUCN Red List search interface. At the top, there is a navigation bar with the year "2021-3", links for "Login / Register", "What's New", "Contact", and "Terms of Use", and a language dropdown set to "English". Below this is a search bar containing "Adiantum lunulatum" with a search icon and a magnifying glass. To the right of the search bar are navigation links: "Advanced", "About", "Assessment process", "Resources & Publications", and "More". Below the search bar is a dark grey navigation bar with options: "Search for 'Adiantum lunulatum'", "Grid", "List", "Map", "Stats", and a "Relevance" dropdown. The main content area is divided into two columns. The left column has a "TYPE" section with radio buttons for "Species" (selected), "Featured Regions", "Documents", and "Red List Indices". Below this is a "SEARCH FILTERS" section with expandable categories: "Taxonomy", "Red List Category", "Land Regions", and "Country Legends". The right column shows "RESULTS (0)" with "Download" and "Save search" buttons. Below the results are filter buttons: "Geographical Scope" set to "Global" and "Include" set to "Species". A vertical "feedback" button is on the far right.

TAXON: *Picalima nitida* (Stapf) T. Durand & H. Durand
SCORE: -1.0 **RATING:** Low Risk

Taxon: *Picalima nitida* (Stapf) T. Durand & H. Durand **Family:** Apocynaceae
Common Name(s): akuamma, ashanti, obéro **Synonym(s):** *Picalima klaineana* Pierre, *Picalima macrocarpa* A.Chev., *Tabernaemontana nitida* Stapf

Assessor: Chuck Chimera **Status:** Assessor Approved **End Date:** 25 Apr 2016
WRA Score: -1.0 **Designation:** L **Rating:** **Low Risk**

Keywords: Tropical Tree, Toxic, Unarmed, Shade-Tolerant, Fleshy-Fruited

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y=-3, n=0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
202	Quality of climate match data	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
203	Broad climate suitability (environmental versatility)	y=1, n=0	n
204	Native or naturalized in regions with tropical or subtropical climates	y=1, n=0	y
205	Does the species have a history of repeated introductions outside its natural range?	y=-2, ?=-1, n=0	n
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	n
302	Garden/amenity/disturbance weed	n=0, y = 1*multiplier (see Appendix 2)	n
303	Agricultural/forestry/horticultural weed	n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed	n=0, y = 2*multiplier (see Appendix 2)	n
305	Congeneric weed	n=0, y = 1*multiplier (see Appendix 2)	n
401	Produces spines, thorns or burrs	y=1, n=0	n
402	Allelopathic		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals	y=1, n=-1	n
405	Toxic to animals		
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	y
408	Creates a fire hazard in natural ecosystems	y=1, n=0	n
409	Is a shade tolerant plant at some stage of its life cycle	y=1, n=0	y

2021-3 Login / Register * What's New Contact Terms of Use English

RED LIST Picalima Advanced About Assessment process Resources & Publications More

Search for "Picalima" Grid List Map Stats Relevance

TYPE RESULTS (0) Download Save search

- Species
- Featured Regions
- Documents
- Red List Indices

Geographical Scope: Global X

Include: Species X

SEARCH FILTERS

- Taxonomy
- Red List Category
- Land Regions

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Computing National Conservation Status

PeerJ Preprints

NOT PEER-REVIEWED

Threatened plants species of Guinea-Conakry: A preliminary checklist

Charlotte Couch¹, Sékou Magassouba², Saba Rokni¹, Martin Cheek¹

¹ Identification and Naming, Royal Botanic Gardens Kew, Richmond, Surrey, UK.

² Herbar National de Guinée, Conakry, Republic of Guinea

Corresponding author:

Charlotte Couch

Email address: c.couch@kew.org

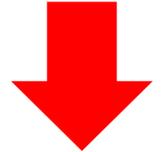


Source: Couch, Magassouba, Rokni, Cheek (2018).

Checklist showing entry of Individual Plant Conservation Status

Preliminary List of Threatened species for the Republic of Guinea.

Assessments: categories in red have been published, categories in black are awaiting review.



Family	Genus	Species	Subspecies	IUCN assessment
Acanthaceae	<i>Anisotes</i>	<i>guineensis</i>		EN
Acanthaceae	<i>Barleria</i>	<i>asterotricha</i>		CR
Acanthaceae	<i>Barleria</i>	<i>maclaudii</i>		EN
Acanthaceae	<i>Brachystephanus</i>	<i>jaundensis</i>	<i>nimbae</i>	VU
Acanthaceae	<i>Brachystephanus</i>	<i>oreacanthus</i>		VU
Acanthaceae	<i>Heteradelphina</i>	<i>paulojaegeria</i>		EN
Acanthaceae	<i>Isoglossa</i>	<i>dispersa</i>		VU
Acanthaceae	<i>Justicia</i>	<i>guineensis</i>		NT
Acanthaceae	<i>Justicia</i>	<i>jamisonii</i>		EN
Acanthaceae	<i>Lepidagathis</i>	<i>capituliformis</i>		NT
Acanthaceae	<i>Lepidagathis</i>	<i>chevalieri</i>		VU
Acanthaceae	<i>Lepidagathis</i>	<i>epacridea</i>		EN
Acanthaceae	<i>Lepidagathis</i>	<i>fimbriata</i>		NT

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CURRENT STATUS OF PLANT DIVERSITY AND CONSERVATION IN NIGERIA

Osawaru, M.E., Ogwu, M.C. and Ahana, C.M.

- About **7,895 plant species** (?West African data) have been recorded with **128 endemic [plant]species** in Nigeria.
- According to this paper, its primary objective was to **provide an appraisal of existing system (?)** with **the aim to support the improvement** of this **network (?) and system (?)**.
- This is quite contrary to what the title suggests.

Biodiversity Conservation in Nigeria: Perception, Challenges and Possible Remedies

Anwadike BC

- According to **the IUCN Red list of 2013**, Nigeria has a total of **309 threatened species** in the following taxonomic categories: Mammals (26), Birds (19), Reptiles (8), Amphibians (13), Fishes (60), Mollusks (1), other Invertebrates (14) and **Plants (168)**.
- The essence of this paper is to **highlight some of these unwholesome practices that endanger biodiversity** and to **sensitize the populace on the importance of biodiversity conservation** practices in Nigeria.
- The paper reported that **119 plant species** are **threatened in Nigeria** where there are only 6(?) nationally protected areas with one biosphere reserve, one Ramsar site and no world heritage site.

Status of Biodiversity in Nigeria

- **Nigeria is rich in biodiversity** with comparatively **rich levels of endemism** and **species richness** due to a **complex topography** and **wide variety of habitats**.
- In **species diversity and endemism**, Nigeria is highly endowed.
- **Borokini (2014)** reports that **Nigerian endemic flora amount to 91 species belonging to 44 families with Rubiaceae accounting for the highest numbers**.

Source:

FME_{env}, (2015). National Biodiversity Strategy and Action Plan (NBSAP). revised 2016-2020.



FEDERAL REPUBLIC OF NIGERIA

NATIONAL BIODIVERSITY STRATEGY AND
ACTION PLAN
2016-2020



FEDERAL MINISTRY OF ENVIRONMENT
December 2015

Nigeria National Biodiversity Strategy and Action Plan

- “...The overall objective of biodiversity conservation in Nigeria is to set in place, as soon as possible, measures that would conserve the dwindling resources and avoid further damage, and over the long term, take necessary steps to reverse the trend of the damage done...”
- **About 4,614 vascular plants have been recorded in Nigeria.**
- **No mention is made how new and recent introduction of species would be found, investigated and conserved!**

[Nigeria] Plant species from the IUCN Red List

Critically Endangered

1 *Acioa dichotoma*

2 *Acioa eketensis*

3 *Afrothismia winkleri*

4 *Autranella congolensis*

5 *Bulbophyllum filiforme*

6 *Cassipourea eketensis*

7 *Chassalia laikomensis*

8 *Cola nigerica*

9 *Dombeya ledermannii*

10 *Eugenia gilgii*

11 *Hymenostegia talbotii*

12 *Liparis goodyeroides*

13 *Napoleonaea lutea*

14 *Napoleonaea reptans*

15 *Psychotria moseskemei*

16 *Saxicolella marginalis*

Endangered

- 1 *Berlinia hollandii*
- 2 *Cola philipi-jonesii*
- 3 *Cryptosepalum diphyllum*
- 4 *Dielsantha galeopsoides*
- 5 *Diospyros crassiflora*
- 6 *Floscopa mannii*
- 7 *Gossweilerodendron balsamiferum*
- 8 *Ixora degemensis*
- 9 *Neolemonniera clitandrifolia*
- 10 *Pericopsis elata*
- 11 *Polystachya cooperi*
- 12 *Pteleopsis habeensis*
- 13 *Sabicea xanthotricha*
- 14 *Sclerochiton preussii*
- 15 *Soyauxia talbotii*
- 16 *Swartzia fistuloides*
- 17 *Talbotiella eketensis*
- 18 *Tieghemella heckelii*

Vulnerable

- 1 *Acanthopale decempedalis*
- 2 *Achyranthes talbotii*
- 3 *Afrofittonia silvestris*
- 4 *Afzelia africana*
- 5 *Afzelia bipindensis*
- 6 *Afzelia pachyloba*
- 7 *Albizia ferruginea*
- 8 *Allexis cauliflora*
- 9 *Allexis obanensis*
- 10 *Allophylus bullatus*
- 11 *Aneilema silvaticum*
- 12 *Angraecum pyriforme*
- 13 *Angylocalyx talbotii*
- 14 *Anopyxis klaineana*
- 15 *Anthocleista microphylla*
- 16 *Anthocleista scandens*
- 17 *Anthonotha nigerica*
- 18 *Anthonotha obanensis*
- 19 *Antrocaryon micraster*
- 20 *Baillonella toxisperma*
- 21 *Baphia dewildeana*
- 22 *Baphia latiloi*

- 23 *Baphia obanensis*
- 24 *Begonia oxyanthera*
- 25 *Begonia preussii*
- 26 *Begonia pseudoviola*
- 27 *Begonia schaeferi*
- 28 *Belonophora talbotii*
- 29 *Berlinia coriacea*
- 30 *Brachystegia kennedyi*
- 31 *Brachystegia nigerica*
- 32 *Brachystephanus longiflorus*
- 33 *Brillantaisia lancifolia*
- 34 *Bulbophyllum nigericum*
- 35 *Calpocalyx cauliflorus*
- 36 *Chazaliella obanensis*
- 37 *Cleistopholis staudtii*
- 38 *Cola gigas*
- 39 *Cola glabra*
- 40 *Cola hypochrysea*
- 41 *Cordia platythyrsa*
- 42 *Craibia atlantica*

- 43 *Crassocephalum bauchiense*
- 44 *Crateranthus talbotii*
- 45 *Crotalaria bamendae*
- 46 *Crotalaria ledermannii*
- 47 *Crotonogyne strigosa*
- 48 *Cuviera talbotii*
- 49 *Daniellia oblonga*
- 50 *Deinbollia insignis*
- 51 *Deinbollia maxima*
- 52 *Deinbollia saligna*
- 53 *Dennettia tripetala*
- 54 *Desmostachys vogelii*
- 55 *Diospyros barteri*
- 56 *Disperis mildbraedii*
- 57 *Dorstenia prorepens*
- 58 *Dracaena viridiflora*
- 59 *Drypetes molundana*
- 60 *Drypetes obanensis*
- 61 *Drypetes preussii*
- 62 *Drypetes staudtii*
- 63 *Encephalartos barteri*
- 64 *Entandrophragma angolense*

Vulnerable

65 *Entandrophragma candollei*
66 *Entandrophragma cylindricum*
67 *Entandrophragma utile*
68 *Eribroma oblonga*
69 *Eriocaulon asteroides*
70 *Eriocaulon bamendae*
71 *Garcinia brevipedicellata*
72 *Garcinia staudtii*
73 *Guarea cedrata*
74 *Guarea thompsonii*
75 *Guibourtia ehie*
76 *Habenaria nigrescens*
77 *Hallea ledermannii*
78 *Hallea stipulosa*
79 *Haplormosia monophylla*
80 *Homalium dalzielii*
81 *Hymenostegia aubrevillei*
82 *Hymenostegia bakeriana*
83 *Ixora foliosa*
84 *Ixora nigerica*
85 *Jollydora glandulosa*
86 *Justicia camerunensis*
87 *Justicia orbicularis*
88 *Khaya anthotheca*

89 *Khaya grandifoliola*
90 *Khaya ivorensis*
91 *Khaya senegalensis*
92 *Loesenera talbotii*
93 *Lophira alata*
94 *Lovoa trichilioides*
95 *Macaranga paxii*
96 *Memecylon candidum*
97 *Mikaniopsis maitlandii*
98 *Millettia conraui*
99 *Millettia macrophylla*
100 *Monodora unwinii*
101 *Napoleonaea egertonii*
102 *Nauclea diderrichii*
103 *Nesogordonia papaverifera*
104 *Nodonema lineatum*
105 *Nothospondias staudtii*
106 *Oricia lecomteana*
107 *Pachypodanthium barberi*
108 *Pararistolochia goldieana*
109 *Pentas ledermannii*
110 *Piptostigma giganteum*
111 *Pseudagrostistachys africana*
112 *Pseuderanthemum dispersum*

113 *Pseudosabicea pedicellata*
114 *Psychotria podocarpa*
115 *Pterygota bequaertii*
116 *Pterygota macrocarpa*
117 *Quassia sanguinea*
118 *Raphia regalis*
119 *Rhabdotosperma ledermannii*
120 *Rhodognaphalon breviscupe*
121 *Robynsia glabrata*
122 *Rutidea nigerica*
123 *Scaphopetalum parvifolium*
124 *Schefflera mannii*
125 *Synsepalum glycydorum*
126 *Tapinanthus preussii*
127 *Terminalia ivorensis*
128 *Tricalysia talbotii*
129 *Trichoscypha mannii*
130 *Trichostachys interrupta*
131 *Turraeanthus africanus*
132 *Uvariastrum zenkeri*
133 *Uvariadendron occidentale*
134 *Vernonia bamendae*
135 *Vitellaria paradoxa*
136 *Warneckea memecyloides*
137 *Xylophia africana*
138 *Xylophia talbotii*

An Autecological Study showing Conservation Status based on IUCN Criteria of *Picralima nitida*

Picralima nitida (Stapf) T.Durand & H.Durand

Taxonomy

Eudicotyledon » Asteridae » Euasteridae I » Gentianales » Apocynaceae

Syn.: *Tabernaemontana nitida* Stapf, *Picralima klaineana* Pierre, *Picralima macrocarpa* A. Chev.

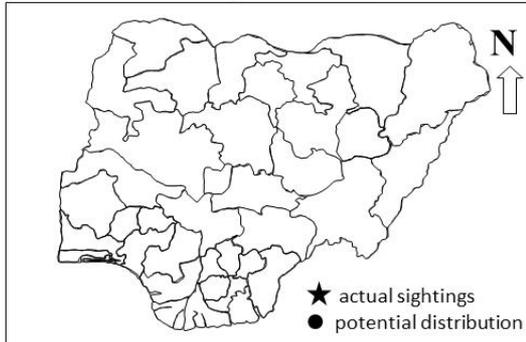
Common name: Picralima, Akuamma, Pile plant.

Local name: Osun (Edo), Osu, Osu-igwe, Osu-abwa (Igbo), Erin, Abere, Agègè, Agègè-arin (Yor.)

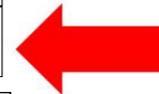
Uses: MEDICINAL PLANTS, timbers, stimulants.

Status: Native to West & Central Tropical Africa.

Habit & Habitat: A tree reaching 25 m, usually less (Ghana, 10 m by 60 cm girth, 15; Ivory Coast, 20 m by 1.25 m girth, 2), in understory of the high deciduous forest from Ivory Coast to W Cameroons, and extending across central Africa to the Congo basin and Uganda. The wood is pale yellow, hard, elastic, fine-grained and taking a high polisha shrub or a tree that can reach a height of 35 metres, but is usually less. The bole can be up to 60cm in diameter. An understory tree in rainforest, also in mature secondary forest and semi-deciduous forest along river banks, at elevations up to 900 metres. An understory tree in rainforest, also in mature secondary forest and semi-deciduous forest along river banks, at elevations up to 900 me.g. Benin Capitol area.



LIFE FORM (mPh)
CHOROTYPE (GC)
IUCN (NE)[DD]



PHENOLOGY												
Stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
♣ Flowering			Observed	Reported								
♥ Fruiting	Observed	Reported	Observed	Reported						Observed	Reported	

Number of Threatened and Non-threatened plant species in Africa

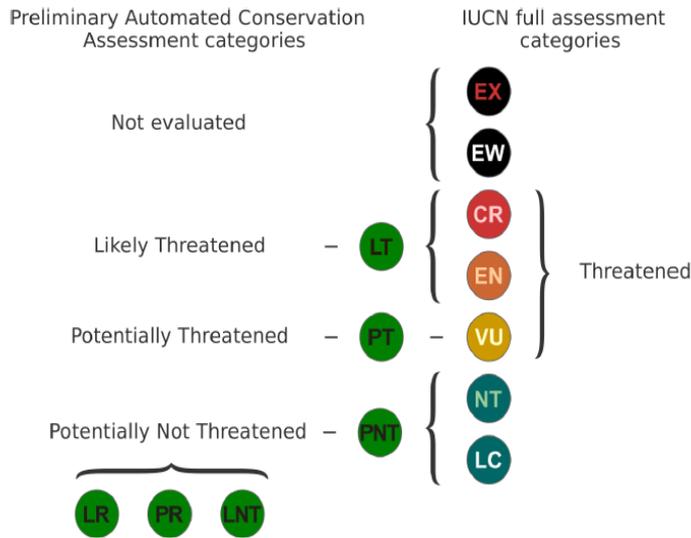


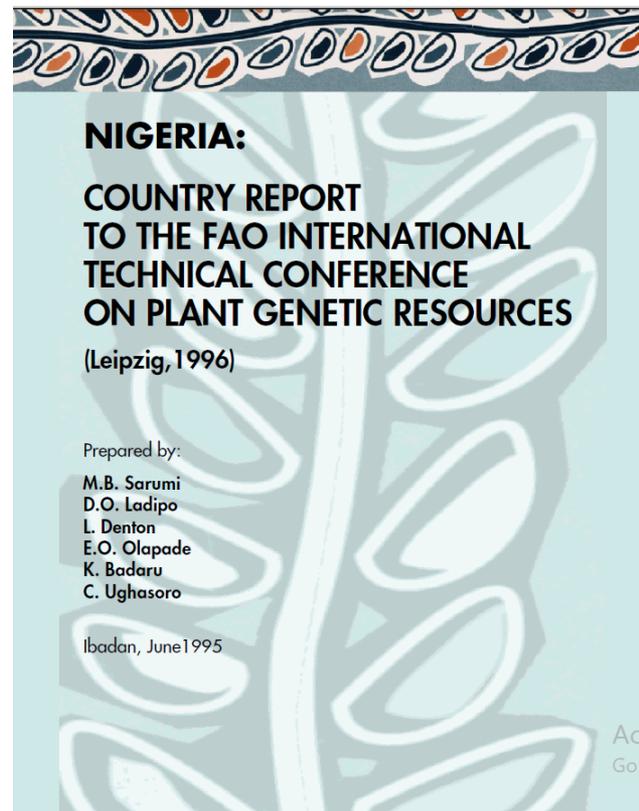
Fig. 1. Correspondence between categories of the PACA and the IUCN categories. PACA categories: LT, PT, PNT, LR, PR, and LNT. IUCN categories: EX, extinct; EW, extinct in the wild; CR; EN; VU; NT; and LC.

Table 1. Number of threatened and nonthreatened plant species for tropical Africa. Total number and proportion of 22,036 vascular plant species assessed as LT/PT and LNT under our Preliminary Automated Conservation Assessments approach. LR/PR categories include species that meet three subcriteria of IUCN Criterion B [Extent of Occurrence (EOO), Area of Occupancy (AOO), and number of locations] but for which known subpopulations are apparently not exposed to a decline of habitat quality due to land cover conversion.

PACA threat category	Criterion A	Criterion B	Both Criteria
LT/PT	5,023 (22.8%)	4,879 (22.1%)	6,990 (31.7%)
LT	2,652 (12%)	2,803 (12.7%)	3,823 (17.3%)
PT	2,371 (10.8%)	2,076 (9.4%)	3,167 (14.4%)
PNT	17,013 (77.2%)	17,157 (77.9%)	15,046 (68.3%)
LR		7,304 (33.1%)	7,304 (33.2%)
PR		1,154 (5.3%)	1,154 (5.2%)
LNT		8,699 (39.5%)	6,588 (29.9%)

NIGERIA: COUNTRY REPORT TO THE FAO INTERNATIONAL TECHNICAL CONFERENCE ON PLANT GENETIC RESOURCES

- **Note by FAO** - This Country Report has been prepared by the national authorities in the context of the preparatory process for the FAO International Technical Conference on Plant Genetic Resources, Leipzig, Germany, 17-23 June 1996.
- The Report is being made available by FAO as requested by the International Technical Conference. However, the report is solely the responsibility of the national authorities. The information in this report has not been verified by FAO, and the opinions expressed do not necessarily represent the views or policy of FAO.



Source: (Leipzig,1996)

A review of the biodiversity conservation status of Nigeria

Imarhiagbe, O., Egboduku, W. O., & Nwankwo, B. J. (2020).

- **A REVIEW – Reported only plants and animals leaving out other organisms**
- Despite a plethora of policies that address issues of conservation of nature's resources, biodiversity continues to face a series of threats in Nigeria.
- **The study aimed at a critical appraisal of the status of biodiversity conservation and utilization pattern in Nigeria.**
- The review was carried out using published materials and personal interactions with knowledgeable individuals. Poverty, population growth, invasive alien species, habitat fragmentation were identified as core factors depleting biodiversity in Nigeria. Although no reliable record yet exists for assessing the rate of biodiversity loss in Nigeria, substantial evidence shows that biodiversity is being lost at a disturbing rate. **The IUCN Red list assessment reports that 141 native animal and 168 native plant species of Nigeria are currently classified in different threat categories.** With these assessments been carried out on the global level, we hypothesized that such global assessment might be biased based on the various identified peculiar threats faced by different species in their local environment. To properly monitor and reduce the current state of biodiversity, reliable data on biodiversity is necessary. The development of a red List for Nigerian flora and fauna is recommended.

Categories of Biodiversity Related Sites

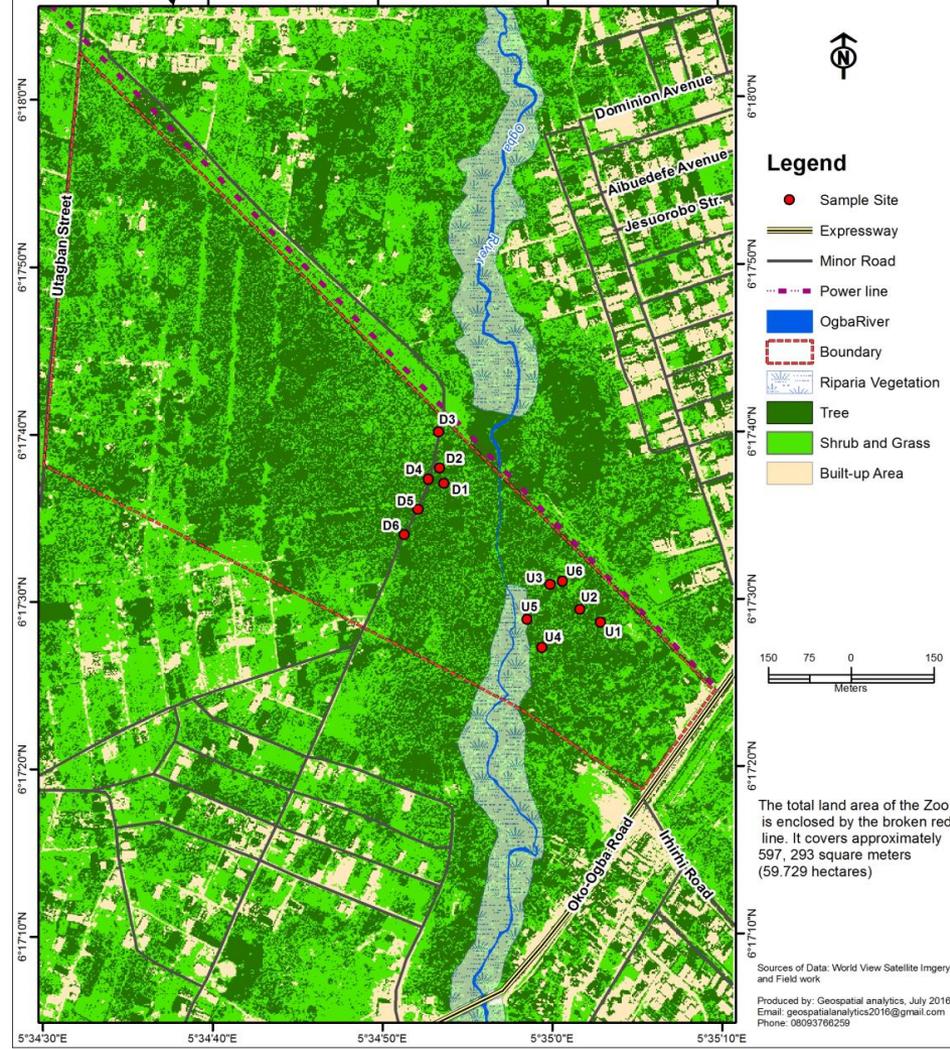
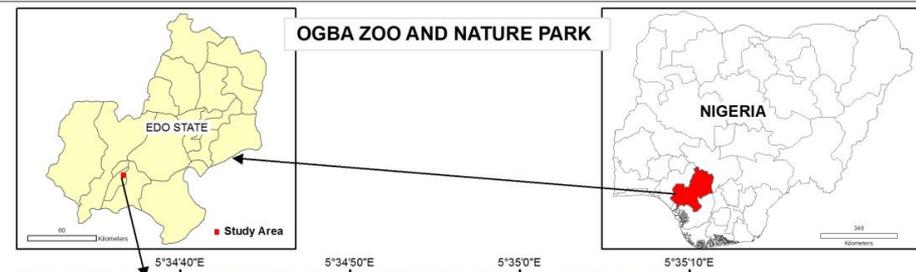
Category of Biodiversity related sites	Number	Comments
		there are plans to designate four more sites (Chingurme, Ibom/Cross River estuary, Wawan Rafi Wetlands and Akassa coastal wetland.
World Heritage Sites	2	The Sukur Kingdom in Mandara Mountains in Madagali LGA of Adamawa State in north-eastern Nigeria is the first Nigerian landmark to be listed on the World Heritage Sites, while Osun Osogbo Grove made the list later in 2005.
Forest Reserves	994	50% still maintain their FR status, while the remaining 50% have either been de-reserved or have been encroached upon and converted to either farmlands or residential areas
Game Reserves (State Governments and a few managed by communities)	32	60% under various levels of management
Biosphere Reserve	1	The only named Biosphere Reserve according to UNESCO is in Omo Forest Reserve, Ogun State, Nigeria
Sacred groves	N/A	Many in number and at varied level of protection

Categories of Biodiversity Related Sites

Category of Biodiversity related sites	Number	Comments
National Parks	7	The National Parks are high priority conservation areas and are found in seven locations, namely Old Oyo National park in Oyo State, Cross River National Park in Cross River state, Gashaka-Gumti in Taraba/Adamawa states, Okomu National Park in Edo state, Chad Basin National Park in Borno/Yobe States, Kainji Lake National Park in Niger/Kwara States and Kamuku National Park in Kaduna state. However, these reservoirs of Nigeria's biodiversity suffer from low funding and several management and technical challenges
Important Bird Areas	27	These are identified as important biodiversity areas too. All National Parks have IBAS within them and 60% of Nigeria Ramsar sites are also IBAs
Ramsar Sites	11	Management plans have been developed for four of these sites (Apoi Creek, Lower Kaduna, Oguta Lake and Baturiya) but are yet to be implemented due to lack of funding. The national wetland policy is at draft stage and

Determination of Conservation Status:

A Case Study Using Ogba Zoo & Nature Park, Benin City



Source: Agianaku and Aigbokhan, unpublished

A Sneak peek of the Species Checklist Profile of Ogba Zoo and Nature Park, Benin City

Microsoft Excel - EXCEL FOR FLORA III EDITED 2020

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
50	8	<i>Thumbergia erecta</i> (Benth.) T. Anderson		1	Shrub	Kings mantle, bush clockvine.		NN/SN	nph	NE	DD	planted, in part	Native	GC	Ornamentals		
51	9	<i>Thumbergia vogeliana</i> Benth.		1	Herb			SN	nph	NE	VU	In forests, of	Native	GC	Ornamentals		
52	1	Amaranthaceae		4													
53	1	<i>Alternanthera brasiliana</i> (L.) Kuntze.		1	Herb	Brazilian joyweed		SN	Th	NE	LC	Ornamental pla	Exotic	AfAm	Ornamentals		
54	2	<i>Amaranthus spinosus</i> L.		1	Herb	Spiny amaranth, thorny amaranth, d		NN/SN	Th	NE	LC	Ruderal open fi	Exotic	Cos	vegetables	Forages, medicinal plants, spices and condiments, miscellaneou	
55	3	<i>Cyathula prostrata</i> (L.) Blume		1	Herb	Pasture weed	Ebe-ekhieven	NN/SN	Th	NE	LC	Forest regrowd	Native	Pan	Medicinal plant	Vegetables, miscellaneous	
56	4	<i>Gomphrena celostoides</i> Mart.		1	Herb	Bachelor's button		AB	Th	NE	LC	Disturbed grou	Exotic	Pan	Auxiliary plant	Medicinal plants	
57	1	Amaryllidaceae		2													
58	1	<i>Crimum jagus</i> (Thomps.) Dandy		1	Herb	Forest crinum, fo	Ogede-odo, ebe-	NN/SN	Geo	DD	LC	Forest	Native	GC	Dyes & tann	Ornamentals, medicinal plants	
59	2	<i>Scadoxus cinnabarinus</i> (Decne.) Friis & Nordal (syn. <i>Maemanthus</i>)		1	Herb	African blood lily		NN/SN	Geo	NE	DD	Woodland, sav	Native	SZ			
60	1	Anacardiaceae		6													
61	1	<i>Anacardium occidentale</i> L.		1	Tree	Cashew, cashew	Ikashu	Cultivated	mph	NE	LC	Home gardens	Exotic	AfAm	Fruits	Vegetables, dyes & tannins, carbohydrates, timbers, auxiliary plants,	
62	2	<i>Lamea nigritana</i> var. <i>pubescens</i> Keay		1	Tree	Woody wood	Ewinwan	SN	mph	NE	VU	Savanna	Native	SZ	Fibres	Vegetables, fruits, timber, carbohydrate, medicinal plant	
63	3	<i>Lamea welwitschii</i> (Hiern) Engl. (syn. <i>Lamea acidissima</i> A. Chev.)		1	Tree		Ewinwan	SN	mPh	LC	NT	Forest	Native	GC	Dyes and tannins		
64	4	<i>Mangifera indica</i> L.		1	Tree	Mango	Imango, Ogwi	Cultivated	mPh	NE	LC	Home gardens	Exotic	Pan	Fruits	Vegetables, dyes & tannins, ornamentals, forages, timbers, auxiliary	
65	5	<i>Pseudospondias microcarpa</i> var. <i>longifolia</i> (A. Rich.) Engl.		1	Tree	Ochol, African gape.		SN	mPh	VU	LC	Forest, riparian	Native	AfT	Timbers	Medicinal plants	
66	6	<i>Spondias mombin</i> L.		1	Tree	Yellow mombin.	Ogheghe, Okigha	NN/SN	mPh	NE	LC	Farmlands, aro	Native	AM	Fruits	Medicinal plants, food, dyes and tannins, auxiliary plants, miscellaneo	
67	1	Annonaceae		11													
68	1	<i>Anonidium mamii</i> (Oliv.) Engl. And Diels		1	Tree	Junglesop	Ogedebgo	SN	MPh	NE	EN	High forest, low	Native	GC	Fruits	Timbers, medicinal plants	
69	2	<i>Artabotrys libericus</i> Diels		1	Liana	climbing ilang-ilang, tail grape		SN	mPhCl	NE	LC	Forests	Native	G			
70	3	<i>Cleistopholis patens</i> (Benth.) Engl. And Diels		1	Tree	Salt and oil tree		NN/SN	mPh	NE	LC	Riverine and sv	Native	GC	Fibres	Timbers, medicinal plants, miscellaneous	
71	4	<i>Monanphotaxis gracilis</i> (Hook f.) P.H. Hoekstra (syn. <i>Friesodielsia</i>)		1	Liana			SN	MPhCl	NE	DD	Forest	Native	G	Fruits		
72	5	<i>Monodora brevipes</i> Benth.		1	Tree	Yellow-flowered	Ukposa, Iyoha	SN	mPh	NE	LC	Forest	Native	G	Spices and co	Medicinal plants	
73	6	<i>Monodora myristica</i> (Gaertn.) Dunal		1	Tree	African nutmeg	Ebenoyoba, ikpos	SN	mPh	LC	LC	Forest	Native	AfT	Spices and co	Fruits, medicinal plants, timber, essential oils & exudates, stimulants,	
74	7	<i>Monodora tenuifolia</i> Benth.		1	Tree	Calabash nutmeg	Uyenghen	NN/SN	mPh	LC	LC	Forest regrowd	Native	GC	Spices and co	Ornamentals, fruits, medicinal plants, timber, vegetable oils, fibres. Mi	
75	8	<i>Greenavodendron suaveolens</i> (Engl. & Diels) Verdc. (syn. <i>Polyalthia</i>)		1	Tree	Golden shrimp	Ewai	SN	mPh	LC	LC	Forest	Native	AfT	Medicinal plant	Miscellaneous	
76	9	<i>Xylopia acutiflora</i> (Dunal) A. Rich.		1	Tree		Unien-eze	SN	mPh	LC	LC	Forest	Native	AfT	Spices and co	timbers, medicinal plants, fibres.	
77	10	<i>Xylopia aethiopia</i> (Dunal) A. Rich.		1	Tree	Ethiopian-pepper	Unien, Aghako	SN	mPh	LC	LC	Lowland rain f	Native	AfT	Spices and co	Timbers, fuel plants, medicinal plants, fibres	
78	11	<i>Xylopia hypolampra</i> Mildbr.		1	Tree			SN	mPh	LC	LC	Forest	Native	AfT			
79	1	Apocynaceae		32													
80	1	<i>Alafia lucida</i> Stapf.		1	Liana			SN	MPhCl	NE	DD	Primary and se	Native	AfT	Medicinal plants		
81	2	<i>Allamanda cathartica</i> L.		1	Shrub	Golden trumpet vine, carolina		NN/SN	nph	NE	LC	Ornamental pla	Exotic	Pan	Ornamentals	Medicinal plants	
82	3	<i>Alstonia boonei</i> De Wild		1	Tree	Pattern wood, st	Uhu, Ukhu, Ogiga	SN	MPh	NE	VU	High forest	Native	AfT	Timbers	Medicinal plants, essential oils, miscellaneous	
83	4	<i>Alstonia consgensis</i> Engl.		1	Tree	Alstonia, stoolwo	Uhu, Ukhu, Ogiga	SN	MPh	NE	VU	Along streams	Native	GC	Timbers	Medicinal plants, essential oils, miscellaneou	
84	5	<i>Baissea leonensis</i> Benth. (syn. <i>Baissea temiloba</i> Stapf, <i>Baissea</i>)		1	Liana			SN	MPhCl	NE	LC	Forest	Native		Medicinal plants		
85	6	<i>Baissea welwitschii</i> (Baill.) Staof ex Hiern		1	Liana			SN	MPhCl	NE	LC	Forest	Native	G	Medicinal plants		
86	7	<i>Baissea zygodioides</i> (K. Schum.) Stapf		1	Liana			SN	MPhCl	DD	LC	forests, riverine	Native	G			
87	8	<i>Callichilia basilites</i> Beentje		1	Shrub		Ekhiawa	SN	nph	NE	VU	Understorey	Native	GC			
88	9	<i>Ceropegia sankuruensis</i> Schltr.		1	Vine			SN	mPhCl	NE	LC	Forest edges	Native				
89	10	<i>Ceropegia vorubana</i> Schltr.		1	Vine	Ceropegia		SN	mPhCl	DD	VU		Native				
90	11	<i>Clitandra cymulosa</i> Benth. (syn. <i>Clitandra elastica</i> A. Chev.)		1	Liana	Brown Medium	Ubabikpan, Ubo-l	SN	MPhCl	DD	NE	Savanna and un	Native				
91	12	<i>Dictyophleba rudens</i> Hepper		1	Liana	mondia, tonicroot	White's-ginger, molundo, mon		mPhCl								
92	13	<i>Funtumia elastica</i> (P. Preuss) Stapf		1	Tree	Silkrubber, bush	Anoyon, Ainyo, E	SN	mPh	NE	LC	Forest	Native		Essentials and	Timbers, medicinal plants, fibres	
93	14	<i>Gongronema latifolium</i> Benth.		1	Liana	Swallow apple, S	Utezi	NN/SN	nphCl	NE	LC	Secondary fore	Native	AfT	Medicinal plant	Vegetables, dyes and tannins, fibre	
94	15	<i>Landolphia calabrica</i> (Stapf) E. A. Bruce		1	Liana			SN	MPhCl	NE	VU	High forest, sed	Native		Fruits		
95	16	<i>Landolphia dulcis</i> (Sabine) Pichon		1	Shrub		Akhe, Ubo nakhe	SN	mPhCl	NE	VU	High forest, sed	Native	GC	Medicinal plant	Fruits, essential oils & exudates	
96	17	<i>Landolphia owariensis</i> P. Beauv.		1	Vine	Rubber vine, wh	Ubo, ubo-mioghor	NN/SN	MPhCl	NE	LC	High forest, sed	Native	AfT	Essential oils	Fruits, medicinal plants, fibres	
97	18	<i>Mondia whitei</i> (Hook f.) Skeels		1	Liana			NN/SN	GeoCl	NE	LC	forest margins	Native	AfT	Medicinal plant	forages, auxiliary plants, spices & condiments, fibres	
98	19	<i>Motandra paniculata</i> (Poir.) I.M. Turner (syn. <i>Motandra guineensis</i>)		1	Liana	White's ginger		SN	MPhCl	DD	EN	Swampy grassl	Native	GC	Medicinal plants		

Source: Agianaku and Aigbokhan, unpublished

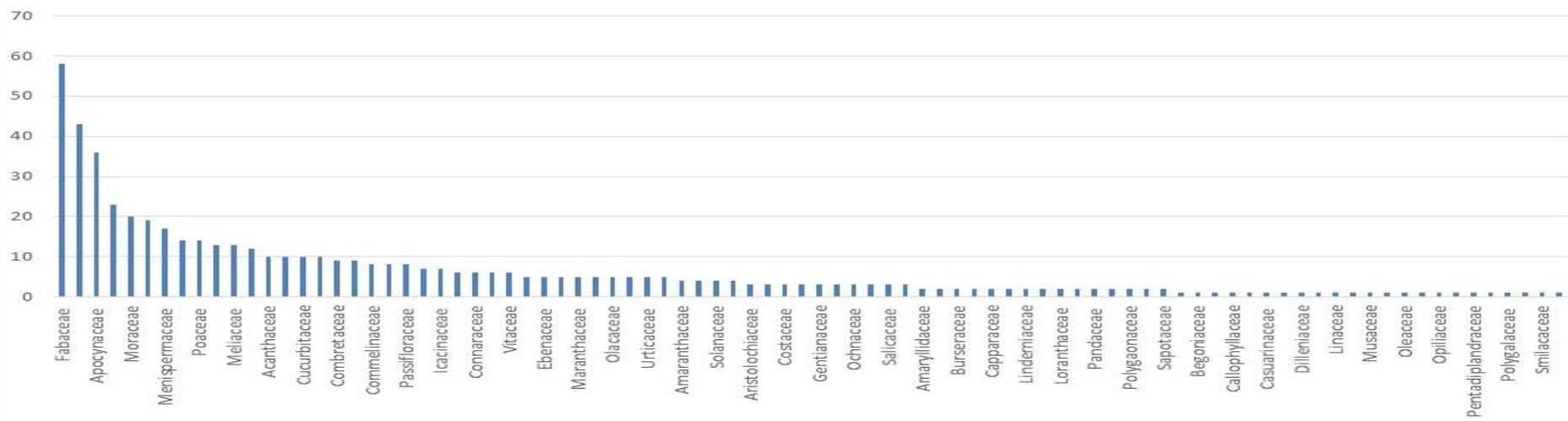
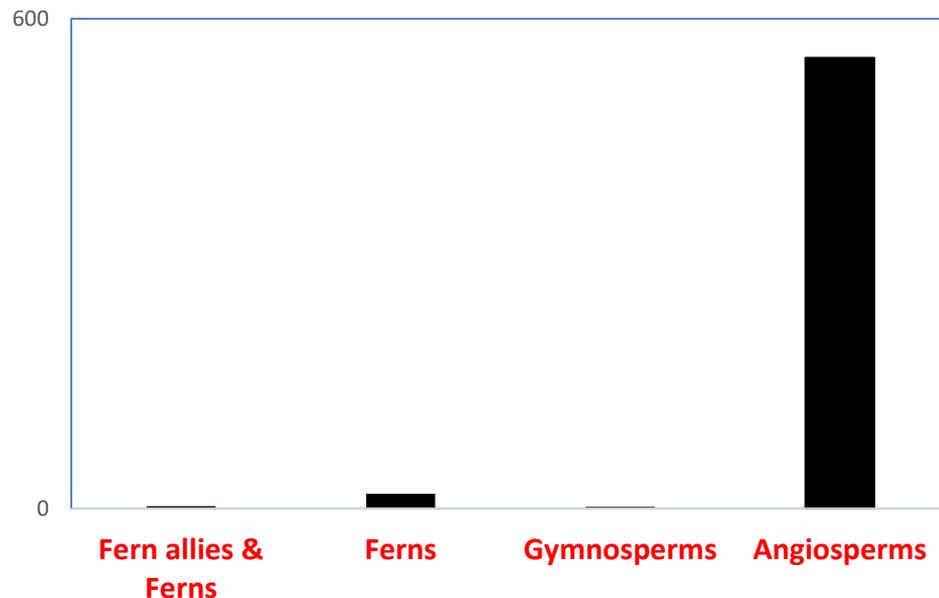
Most prevalent vascular plant families of Ogba Zoo & Nature Park (in descending order of prevalence)

Family name	No. of species	% Relative frequency
Fabaceae	58	10.6
Rubiaceae	43	7.9
Apocynaceae	36	6.6
Euphorbiaceae	23	4.2
Moraceae	20	3.7
Malvaceae	19	3.5
Menispermaceae	17	3.1
Lamiaceae	14	2.6
Poaceae	14	2.6
Asteraceae	13	2.4
Meliaceae	13	2.4
Annonaceae	12	2.2
Acanthaceae	10	1.8
Araceae	10	1.8
Cucurbitaceae	10	1.8
Cyperaceae	10	1.8

Source: Agianaku and Aigbokhan, unpublished

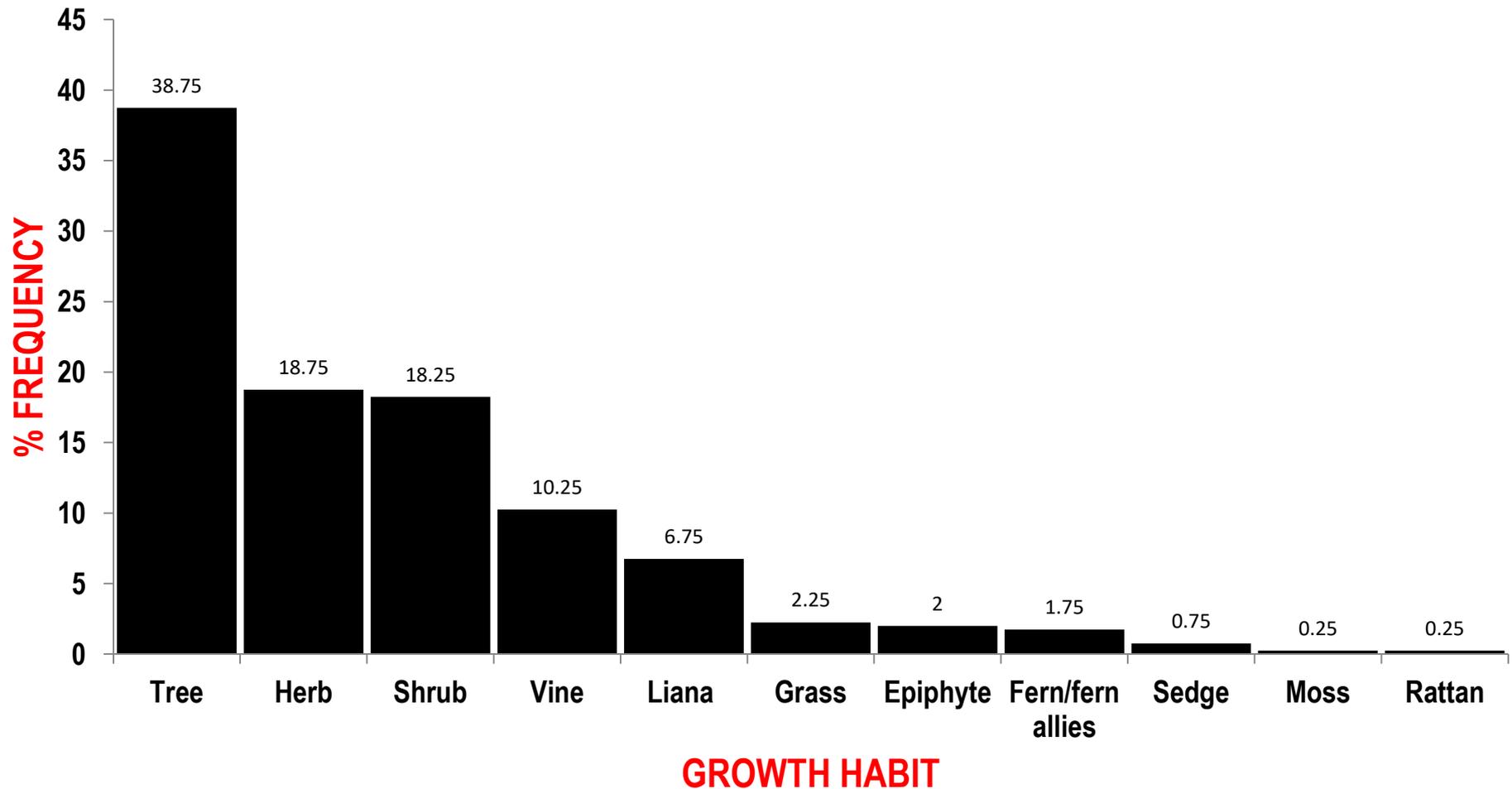
Profile of Vascular Plant Distribution at Ogba Zoo & Nature Park

Taxonomic group	Number	%
Fern allies & Ferns	3	0.5
Ferns	18	3.1
Gymnosperms	2	0.3
Angiosperms	552	96.0
Total	575	



Source: Agianaku and Aigbokhan, unpublished

Distribution of Growth Habits of Vascular Plants of Ogba Zoo & Nature Park

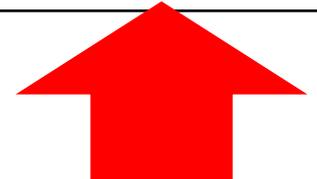


Source: Agianaku and Aigbokhan, unpublished

Numerical Composition of Flora of Ogba Zoo & Nature Park

Group	Families	Genera	Species
Fern Allies	2		
Pteridophytes	18	????	????
Gymnosperms	3	????	????
Angiosperms	103	????	????
Dicotyledons	????	????	????
Monocotyledons	????	????	????
Total Angiosperms	103	????	????
Grand Total	????	????	562

Source: Agianaku and Aigbokhan, unpublished



Extracting a Conservation Status from the Species Checklist Database

Source: Agianaku and Aigbokhan, unpublished

EXCEL FOR FLORA III EDITED 2020 - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	SCIENTIFIC NAMES					HABIT	COMMON NAME	LOCAL NAME	RANGE	USE FOR	CONSERVATION STATUS	HABITAT	
43	1		<i>Asystasia buettneri</i> Lindau (syn. <i>Asystasia calycina</i> Benth.)		1	Herb			SN	Geo	NE	LC	Secondary forest
44	2		<i>Brillantaisia lamium</i> (Nees) Benth.		1	Herb	Brillantasia	Ebohohode, igha	NN/SN	Geo	NE	LC	Wide spread in
45	3		<i>Elytraria marginata</i> Vahl		1	Herb	Elytraria		NN/SN	Geo	NE	LC	Lowland rain forest
46	4		<i>Justicia tenella</i> (Nees) T. Anders.		1	Herb	Water-willow		NN/SN	Geo	NE	LC	Moist forest, forest
47	5		<i>Phaulopsis barberi</i> T. Anderson		1	Herb			SN	Geo	DD	LC	Forset, wet grassland
48	6		<i>Phaulopsis imbricata</i> (Forssk.) Sweet		1	Herb	Himalayan Ruehelia		SN	Geo	LC	LC	Shady places and
49	7		<i>Pseuderanthemum tunicatum</i> (Afzel.) Milne-Redhead		1	Herb	"night and afternoon"		SN	Ch	NE	LC	forest floor in forest
50	8		<i>Thunbergia erecta</i> (Benth.) T. Anderson		1	Shrub	Kings mantle, bush clockvine.		NN/SN	nph	NE	DD	planted, in park
51	9		<i>Thunbergia vogeliana</i> Benth.		1	Herb			SN	nph	NE	VU	In forests, often
52	1		Amaranthaceae	4									
53	1		<i>Alternanthera brasiliana</i> (L) Kuntze.		1	Herb	Brazilian joyweed		SN	Th	NE	LC	Ornamental plant
54	2		<i>Amaranthus spinosus</i> L.		1	Herb	Spiny amaranth, thorny amaranth		NN/SN	Th	NE	LC	Ruderal open areas
55	3		<i>Cyathula prostrata</i> (L.) Blume		1	Herb	Pasture weed	Ebe-ekhieven	NN/SN	Th	NE	LC	Forest regrowth
56	4		<i>Gomphrena celosioides</i> Mart.		1	Herb	Bachelor's button		AB	Th	NE	LC	Disturbed ground
57	1		Amaryllidaceae	2									
58	1		<i>Crinum jagus</i> (Thomps.) Dandy		1	Herb	Forest crinum, forest	Ogede-odo, ebe-	NN/SN	Geo	DD	LC	Forest
59	2		<i>Scadoxus cinnabarinus</i> (Decne.) Friis & Nordal (syn. <i>Haemanthus</i>)		1	Herb	African blood lily		NN/SN	Geo	NE	DD	Woodland, savanna
60	1		Anacardiaceae	6									
61	1		<i>Anacardium occidentale</i> L.		1	Tree	Cashew, cashew	Ikashu	Cultivated	mph	NE	LC	Home gardens, in
62	2		<i>Lamnea nigriflora</i> var. <i>pubescens</i> Keay		1	Tree	Woodier wood	Ewinwan	SN	mph	NE	VU	Savanna
63	3		<i>Lamnea welwitschii</i> (Hien) Engl. (syn. <i>Lamnea acidissima</i> A. Chev.)		1	Tree		Ewinwan	SN	mPh	LC	NT	Forest
64	4		<i>Mangifera indica</i> L.		1	Tree	Mango	Imango, Ogwi	Cultivated	mPh	NE	LC	Home gardens, in
65	5		<i>Pseudospondias microcarpa</i> var. <i>longifolia</i> (A. Rich.) Engl.		1	Tree	Ochol, African grape.		SN	mPh	VU	VU	Forest, riparian
66	6		<i>Spondias mombin</i> L.		1	Tree	Yellow mombin	Ogheghe, Okigh	NN/SN	mPh	NE	LC	Farmlands, arc

UNCLASSIFIED

Page 2

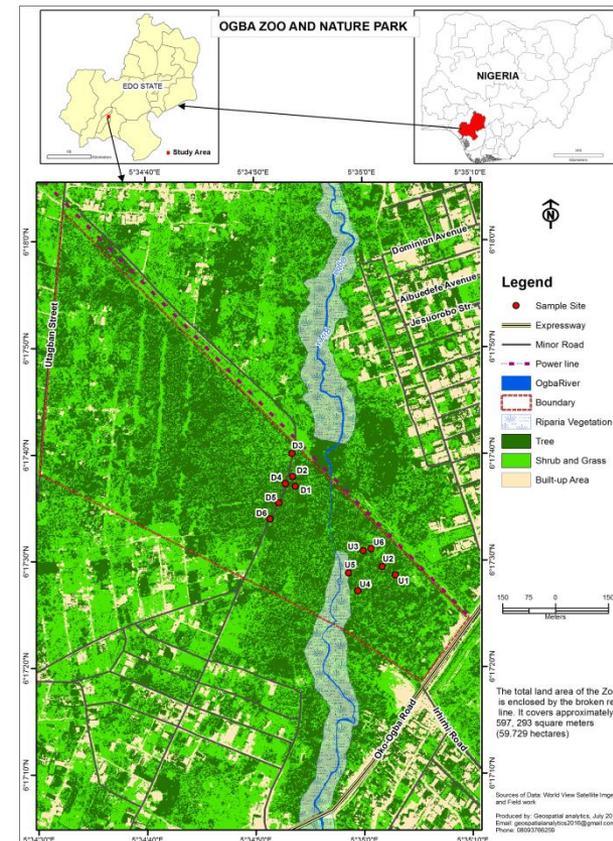
Page 2

Classification of Conservation status of Flora of Ogba Zoo using IUCN Criteria



Ogba Zoo & Nature Park: Critically endangered plants (CR)

1. *Napoleonaea lutea* Bak. f. ex Hutch. & Dalz.
2. *Psychotria bimbiensis* Bridson & Cheek



Source: Agianaku and Aigbokhan, unpublished

Psychotria bimbiensis Bridson & Cheek



The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2008: T43887A10829313

Psychotria bimbiensis

Assessment by: Cheek, M. & Bridson, D.

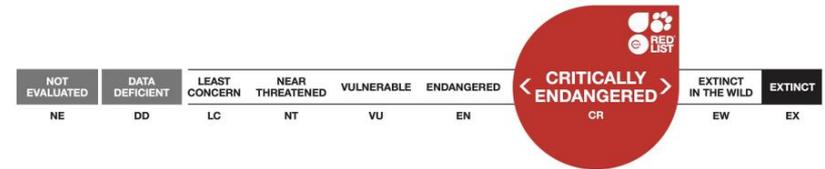


Photo credit: E.I. Aigbokhan

Source: Agianaku and Aigbokhan, unpublished

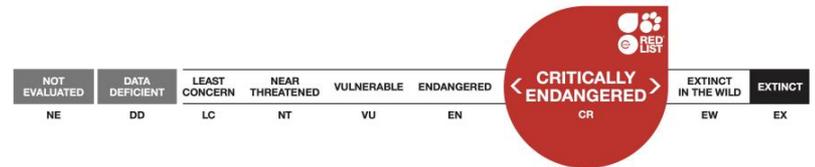
Napoleonaea lutea Bak. f. ex Hutch. & Dalz.



The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2008: T32707A9723503

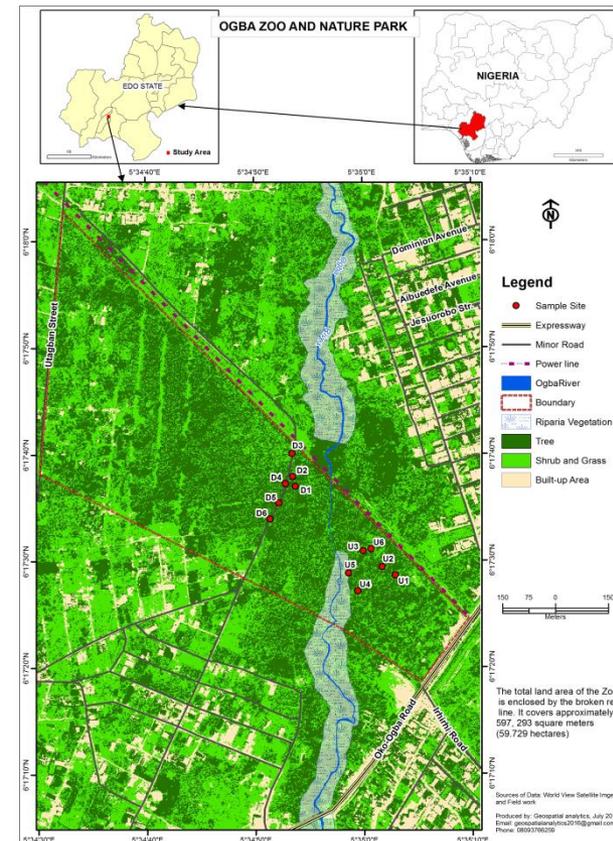
Napoleonaea lutea

Assessment by: World Conservation Monitoring Centre



Ogba Zoo & Nature Park: Endangered plants (EN)

1. *Araucaria araucana* (Molina) K.Koch
2. *Diospyros alboflavescens* (Gurk) F. White
3. *Diospyros crassiflora* Pierre ex A. Chev
4. *Pericopsis elata* (Harms) Meeuwen (syn. *Afrormosia elata* Harms)
5. *Prioria balsamifera* (Vermosen) Breteler (syn. *Gossweilerodendron balsamiferum* (Vermoesen) Harms)



Source: Agianaku and Aigbokhan, unpublished

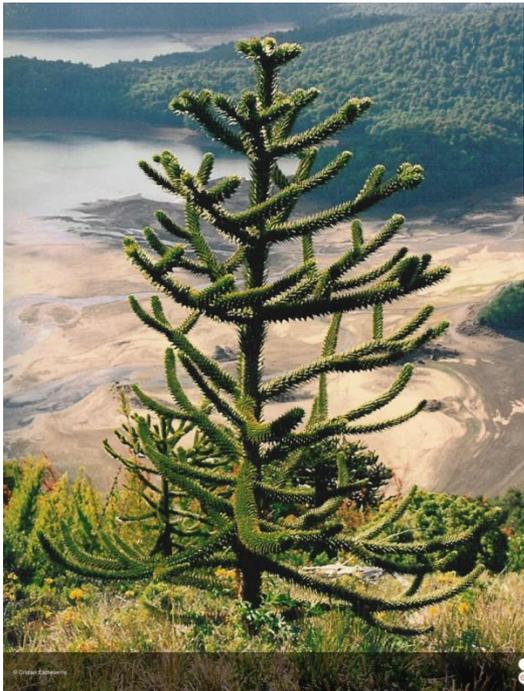
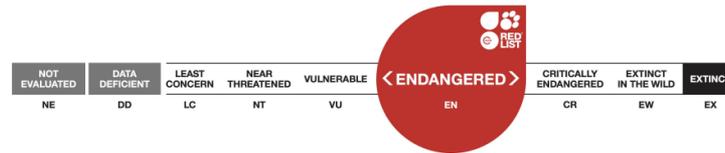
Araucaria araucana (Molina) K.Koch



The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2008: T31355A2805113

Araucaria araucana, Monkey Puzzle

Assessment by: Premoli, A., Quiroga, P. & Gardner, M.



Source: <https://wlr.iucnredlist.org/2093403638.jpg>

Photo credit: E.I. Aigbokhan

Diospyros alboflavescens (Gurk) F. White



The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2008: T173784A1399393

Diospyros alboflavescens

Assessment by: Cheek, M. & Gosline, G.

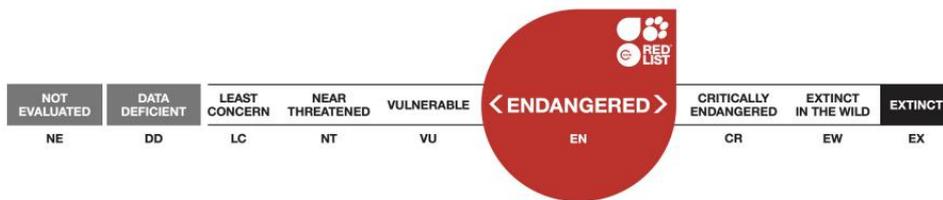


Photo credit: E.I. Aigbokhan

Diospyros crassiflora Pierre ex A. Chev



The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2008: T33048A9753158

Diospyros crassiflora, Ebony

Assessment by: African Regional Workshop (Conservation & Sustainable Management of Trees, Zimbabwe, July 1996)

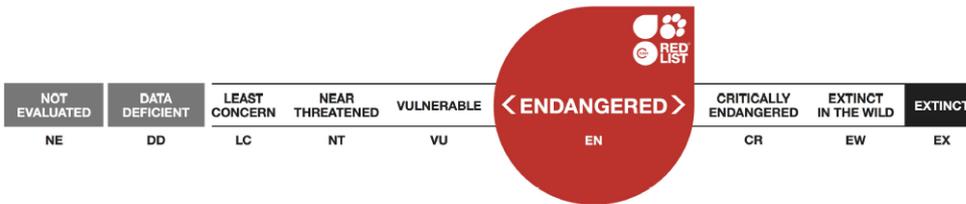


Photo credit: Google image

Pericopsis elata (Harms) Meeuwen (syn. *Afrormosia elata* Harms)



The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2020: T33191A67802601
Scope(s): Global
Language: English

Pericopsis elata

Assessment by: Hills, R.



Photo credit: E.I. Aigbokhan

Prioria balsamifera (Vermosen) Breteler (syn. *Gossweilerodendron balsamiferum* (Vermoesen) Harms)



The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2008: T33052A9753751

Gossweilerodendron balsamiferum

Assessment by: African Regional Workshop (Conservation & Sustainable
Management of Trees, Zimbabwe, July 1996)

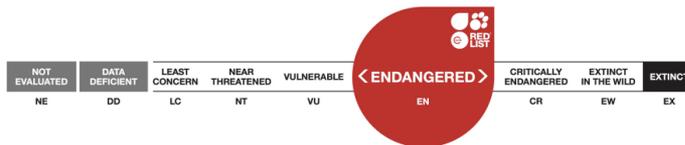
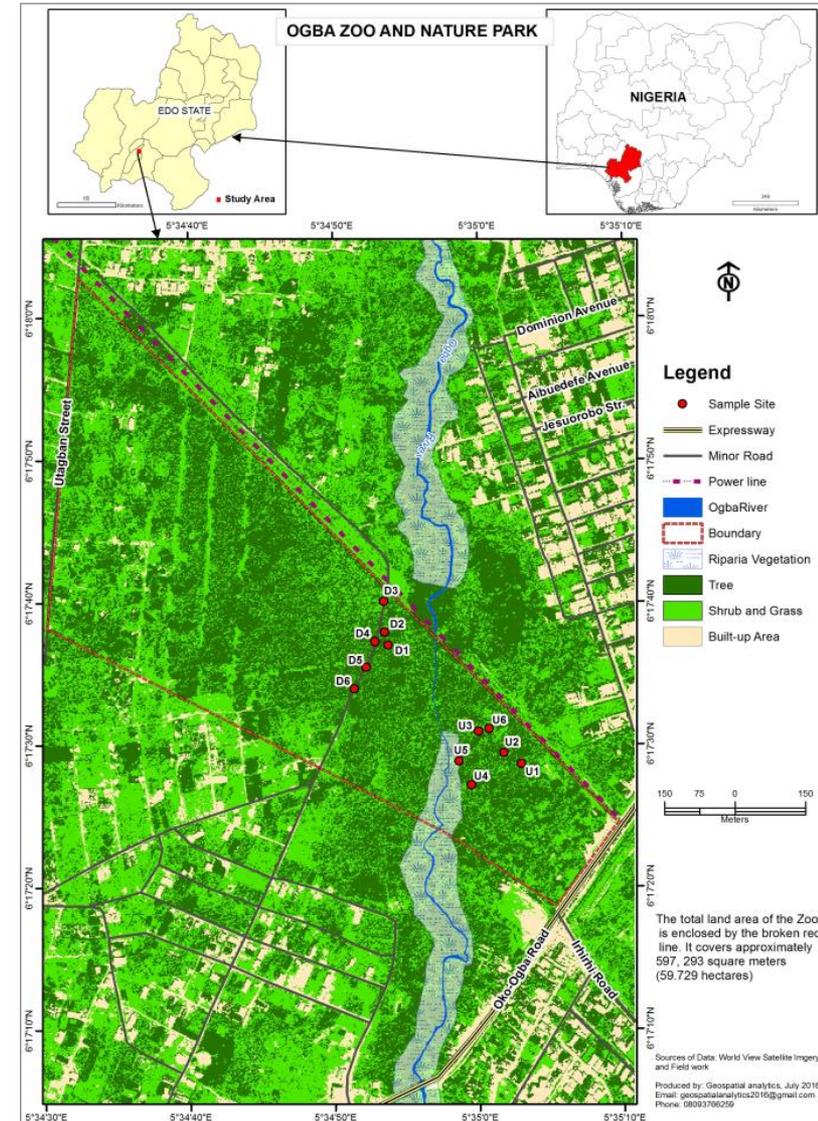


Photo credit: E.I. Aigbokhan

Ogba Zoo & Nature Park: Vulnerable plants (VU)

1. *Albizia ferruginea* (Guill. & Per.) Benth
2. *Diospyros barteri* Hern (syn. *Diospyros hirta* Gurke ex Hutch & Dalziel)
3. *Eribroma oblongum* syn. *Sterculia oblonga* Mast.



Source: Agianaku and Aigbokhan, unpublished

Diospyros barteri Hern



The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2008: T33193A9759923

Diospyros barteri

Assessment by: Hawthorne, W.



Photo credit: E.I. Aigbokhan



Albizia ferruginea (Guill. & Per.) Benth



The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2021: T33035A67742883
Scope(s): Global
Language: English



Albizia ferruginea

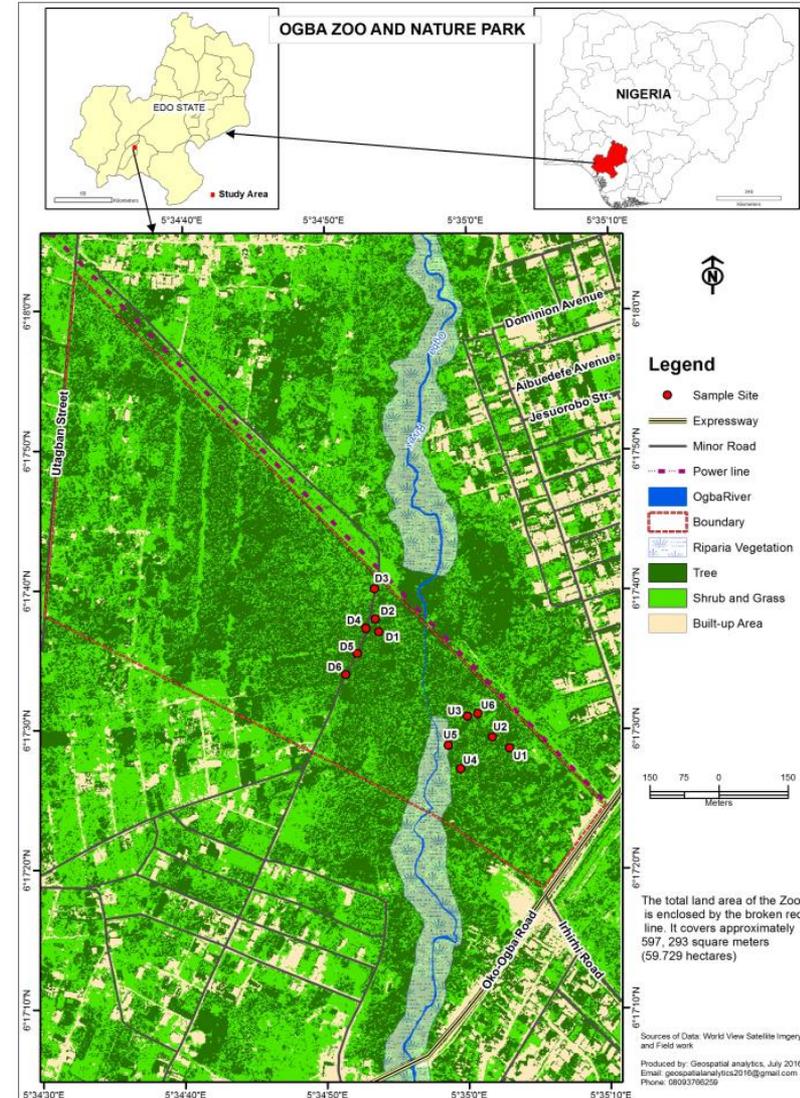
Assessment by: Hills, R. & Doucet, J.



Photo credit: E.I. Aigbokhan

Ogba Zoo & Nature Park: Near Threatened Plants (NT)

1. *Coelocaryon sphaerocarpum* Foulloy
2. *Milicia excelsa* (Welw.) C. C. Berg
3. *Rinorea keayi* Brenan



Source: Agianaku and Aigbokhan, unpublished

Coelocaryon sphaerocarpum Fouilloy



The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2020: T154161947A157625934
Scope(s): Global
Language: English



Coelocaryon sphaerocarpum

Assessment by: Williams, E.



Photo credit: Google image

Milicia excelsa (Welw.) C. C. Berg



The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2008: T33903A9817388

Milicia excelsa

Assessment by: World Conservation Monitoring Centre



Photo credit: E.I. Aigbokhan

Rinorea keayi Brenan



The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2008: T32735A9726361

Rinorea keayi

Assessment by: World Conservation Monitoring Centre

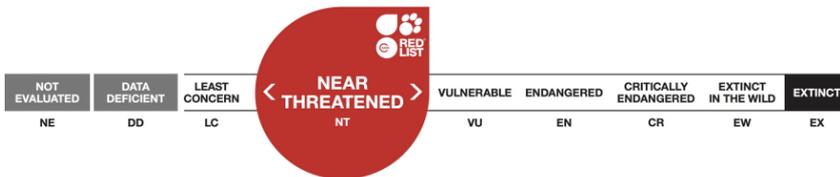


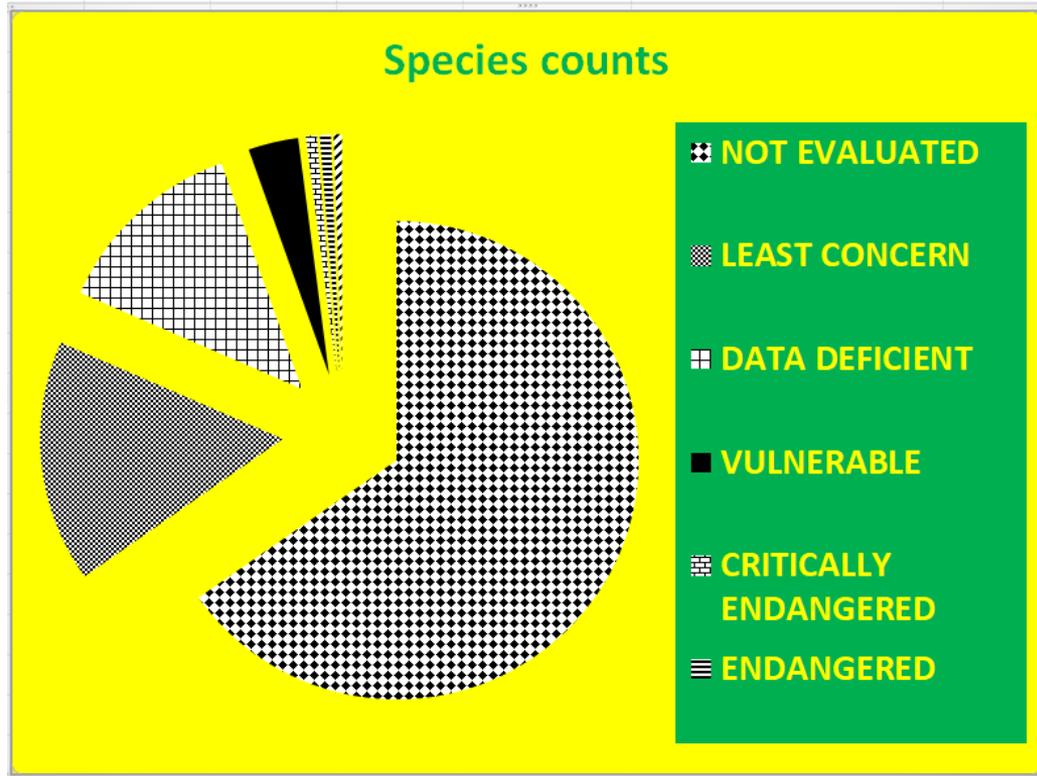
Photo credit: E.I. Aigbokhan

Conservation Status of Ogba Zoo & Nature Park Using IUCN Criteria

RedList Class	Species counts	%
NOT EVALUATED	351	65.36
LEAST CONCERN	88	16.39
DATA DEFICIENT	70	13.04
VULNERABLE	18	3.35
CRITICALLY ENDANGERED	4	0.74
ENDANGERED	4	0.74
NEAR THREATENED	3	0.56

Source: Agianaku and Aigbokhan, unpublished

Certified IUCN Conservation Status for Ogba Zoo & Nature Park

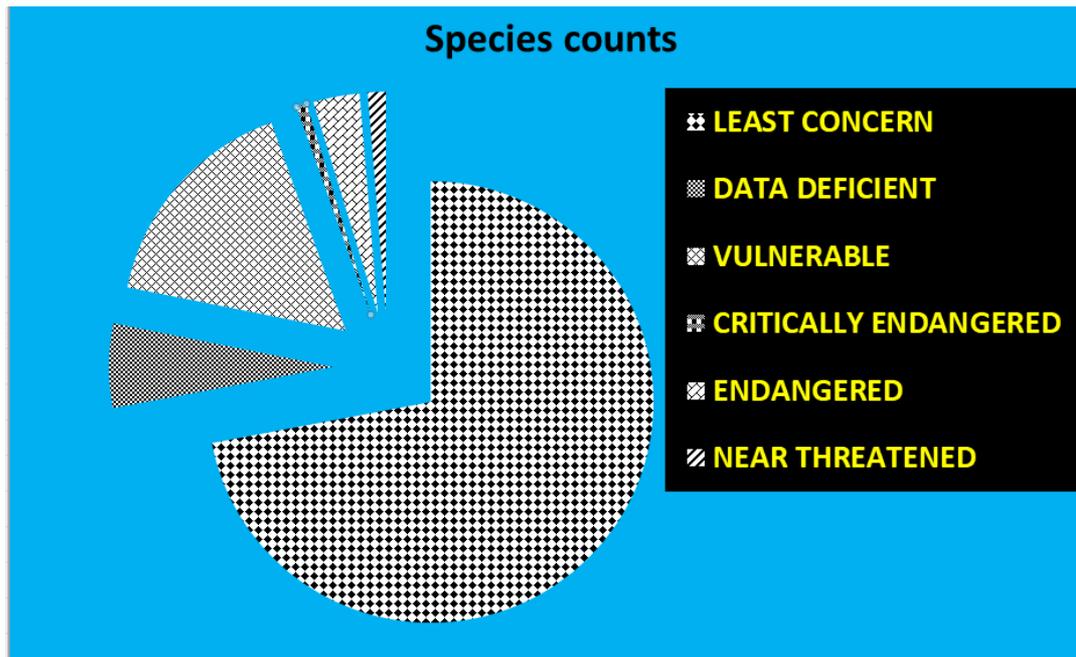


RedList Class	Species counts	%
NOT EVALUATED	351	65.36
LEAST CONCERN	88	16.39
DATA DEFICIENT	70	13.04
VULNERABLE	18	3.35
CRITICALLY ENDANGERED	4	0.74
ENDANGERED	4	0.74
NEAR THREATENED	3	0.56

Source: Agianaku and Aigbokhan, unpublished

Projected Conservation Status for Ogba Zoo & Nature Park using IUCN Criteria

RedList Class	Species counts	%
LEAST CONCERN	386	72.01
DATA DEFICIENT	33	6.16
VULNERABLE	88	16.42
CRITICALLY ENDANGERED	4	0.75
ENDANGERED	18	3.36
NEAR THREATENED	7	1.31



Source: Agianaku and Aigbokhan, unpublished

Classification of Conservation status of Flora of Nigeria using IUCN Criteria



**So, to answer the question, “What is
the Conservation Status of Flora in
Nigeria?”**

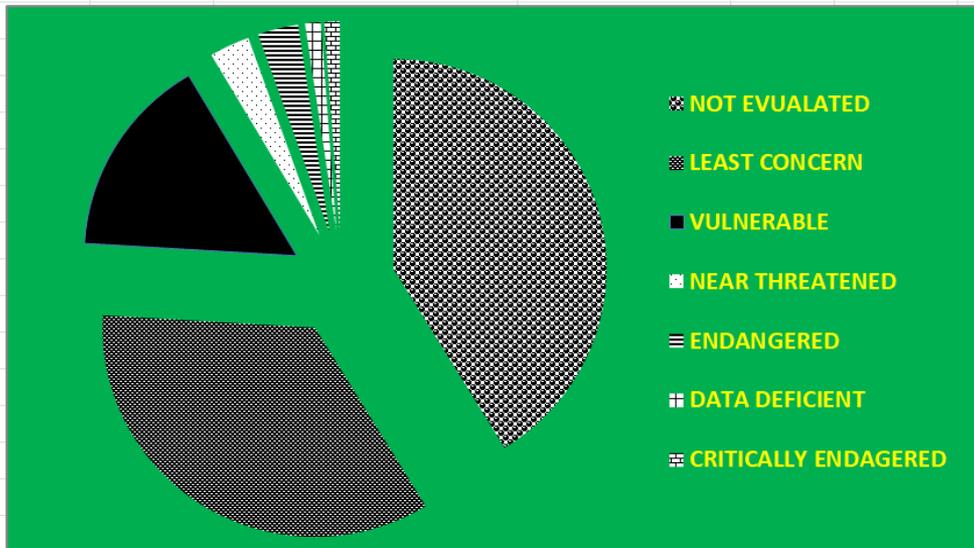
Conservation Status of Nigerian Flora Based on IUCN Assessment of Available Data

RedList Class	Species counts	%
LEAST CONCERN		
DATA DEFICIENT		
VULNERABLE	138	0.0293
CRITICALLY ENDANGERED	12	0.0025
ENDANGERED	18	0.0038
NEAR THREATENED		
Estimated Threatened Species	168	
Total Plant Species	4715	

Adapted from Borokini, T.I. (2014)

Conservation Status of Nigerian Flora Based on IUCN Assessment of Annotated Checklist

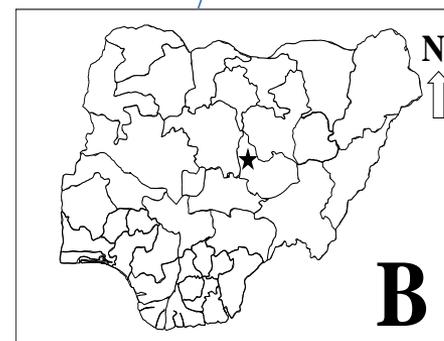
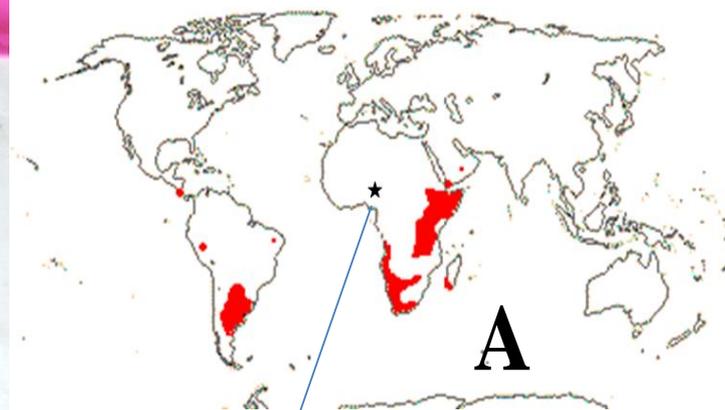
Redlist Class	Species count	%
NOT EVUALATED	175	41.3
LEAST CONCERN	147	34.7
VULNERABLE	66	15.6
NEAR THREATENED	13	3.1
ENDANGERED	13	3.1
DATA DEFICIENT	5	1.2
CRITICALLY ENDAGERED	5	1.2
TOTAL	424	



Source: E.I. Aigbokhan unpublished

Recent Discoveries of New Plant Species in Nigeria

Incidence of *Hydnora* Thunb. in Nigeria: First report

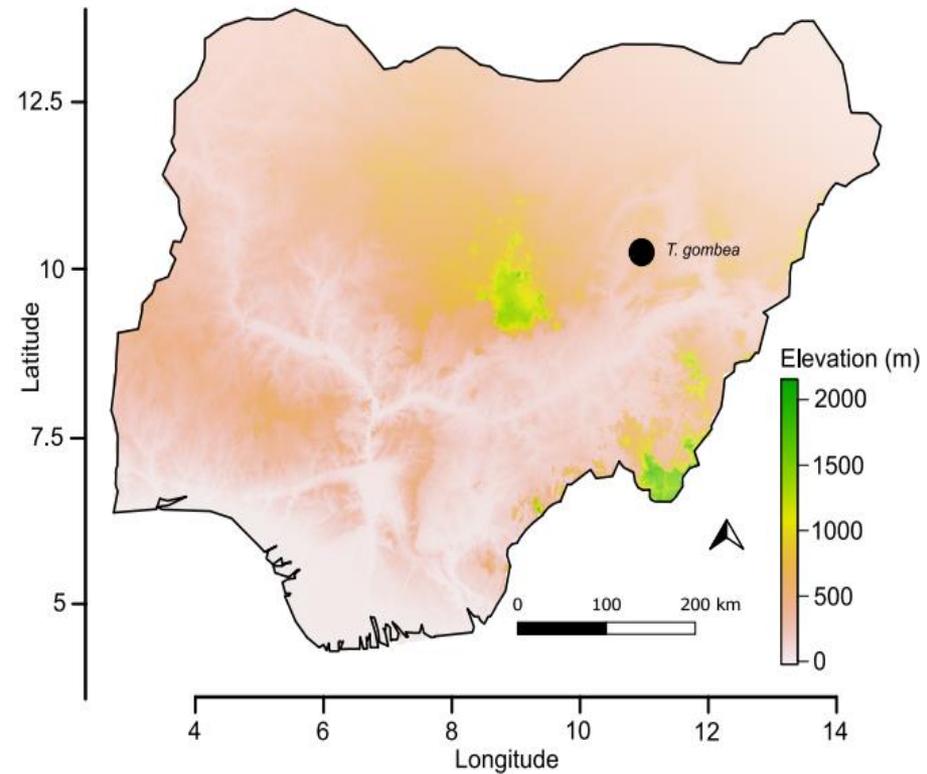


Source:

Agyeno, O. E., Aigbokhan, E., Jayeola, A., Elisha, E., Dawurung, C., Gosomji, Y., Oso, O. (2018)

A New Species (*Tinnea gombea* Zhigila)

from the Guinea Savannah, Gombe, Nigeria



Source: Zhigila, Aigbokhan, & Muasya, (submitted)

Postscript

- Establish a **National Botanical Institute (NBI)**, modeled after that of South Africa.
- Provide fund to support biodiversity Action Plan development and implementation.
- Fund biodiversity Specialist Groups for all taxa with priority given to the most critical cases.
- Re-designation and management of nature reserves based on threatened plant taxa. Currently, only animal taxa (predominantly mammals) are utilized.
- Promotion of conservation education, research and international cooperation.
- In the different National Biodiversity Strategy and Action Plans (NBSAP) published so far, **none contained aspects on flora exploration and research component for updates on plant biodiversity.**

Postscript Cont'd

- Most of the recent **biodiversity data reports** and **literature** from **Nigeria** are **out-of-date** and contain **information of doubtful authenticity**.
- **Initiate biodiversity databases** for all taxa for use in mining current up-to-date information on biodiversity conservation and other development activities.
- Actively **fund** the **research and publication** of **national, regional** and **local flora**.
- **Fund research** and **publication of taxonomic Monographs, Revisions**, and the **description of new plant species**.

Postscript Cont'd

- **Need to engage thorough bred technical research experts** in compilation of **Biodiversity reports as against** rather than leaving relying on **bureaucrats** and technician domiciled in the respective **government Ministries** may not be current on new scientific findings.
- This **practice and flaw** may have informed the **complete exclusion of Nigerian experts and institutions** in the recent **compilation of the multivolume literature on Plant Resources of Tropical Africa by PROTA (2002)**.
- **The once celebrated Forestry Research Institute of Nigeria (FRIN)** was **notably absent** from this exercise while **experts for its Ghanaian counterpart Forestry Research Institute of Ghana (FORIG)** and **plant experts from institutions in Ghana** were markedly recognized and contributed immensely to the project.

Determining the Conservation Status of Flora of Nigeria – A Recommendation

- To be able to provide **a tool** for **making an informed** and **accurate** determination of **the conservation status of the Nigerian Flora**, it is imperative to address the following:
- Set up a **National Biodiversity Commission**
- **Commission several regional and national expeditions**
- **Reconfigure the structure of biodiversity refugia** (National Parks, Forest Reserves, etc.) away from promoting tourism **with little or no emphasis on scientific research or educational purposes.**
- **Employ scientific Officers** across the **different taxonomic taxa** with a **mandate of continuous monitoring** and **collection of occurrence data all year round,**
- **Engage qualified technical manpower** as against the current haphazard ministerial employments based of filial or fraternal affiliations.

Thank You for Listening

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