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Preliminary Report on the Floristic Diversity across the Cameroon Mountains: A Case Study of the Bakossi National Park, South West Cameroon.

Summary

A 30 days field work was carried out from May 16 to 25, and June 7 to 26, 2016 in Enyandong and Muandelengoh villages of the Bangem Municipality. It was a 28 man field team composed of TroPEG members, consultants, Students on internship, and villagers from both villages. This survey was aimed at understanding the floristic diversity of the Bakossi National Park (BNP), which is in line with TroPEG's vision of mapping and understanding species richness, composition, diversity, forest structure, and inventory completeness across the continental part of the Cameroon Mountains and if possible, across the whole mountain range.

Permanent survey plots measuring 20 x 500 m per hectare were established. Each hectare was further divided into 25, 20x20 m quadrats. A total of 12 ha were established equally in 3 locations meaning 4 ha per location. In each hectare, all trees and lianas were measured at diameter at breast height (DBH) of ≥ 10 cm using a diameter tape. Small trees and lianas of DBH 1-9.9 cm were measured using a caliper and sampled in nested plots of 10 x 10 m² in quadrat 1, 6, 11, 16, and 21. Observational data was also collected in the entire study area. In the 12 ha plot that was sampled, closed to 1000 herbarium specimens were collected, 330 species were identified and collected from sampled plots and about 250 species were recorded /collected as observational data. Real figures will be confirmed after data entry and specimens identification.

Background

This preliminary report is the first part of the project titled: Floristic Diversity across the Cameroon Mountains: A Case study of the Bakossi National Park, and the Mt Nlonako. Grant number 19476-D of the 2nd Booster RSG grant.

The Bakossi National Park (BNP) is a newly created national park less than a decade old. It was created in 2007 through a Prime Ministerial Decree No. 2007/1457/PM of 28 November 2007, and covers a surface area of 293.2 km² in the Kupe-Muanenguba division in the South West Region of Cameroon.

Field work was concentrated at the northeastern corner of the park in a disturbed submontane forest closed to the village of Enyandong, and the submontane forest closed to the village of Muandelengoh.

Field preparation

Prior to field work, topographic and vegetation maps were prepared with the help of Dr. Mabel Nechia Wantim of the Department of Environmental Sciences at the University of Buea, Cameroon. A preparatory trip was made to some villages around the Bakossi National Park including Enyandong, Elah, and Muandelengoh by Sainge N. Moses to identify potential sampling sites.

Field work

Survey was carried out following the methods develop by Sainge N. Moses of Tropical Plant Exploration Group (TroPEG) Cameroon (Sainge 2016). During field work, plots of 20 x 500 m representing 1 ha were established. All plant species with diameter at breast height ≥ 10 cm were measured with the aid of a diameter tape and tagged using permanent aluminum tags. Plant species with DBH 1-9.9 cm in nested plots of 10x10 m were measured with the help of a caliper and continuous uniform numbers assigned to them. Observational data were collected to improve on the species list of the area at three vegetation types: disturbed submontane, submontane forest, and farmlands. A 12 ha plot was sampled and closed to 1000 herbarium specimens were collected in sterile and fertile materials in various duplicates. Plants species identified constitute about 330 plant species as plot species whereas close to 250 plant species were identified as observational species. Closed to 95% of all tagged plants and lianas had herbarium collection for detailed identification later in the herbarium.

In the field, plant identification was done by Sainge Moses, Mambo Peter, Michael Lyonga, Bangsi Oliver, and a Botany student on internship Douandji Douandji Franck Mathaus.

Table1. Number of plots recorded with their vegetation types, sites and GPS points.

SN	TroPE G Plot #	Vegetation Type	Site	Site Code	Latitude (N)	Longitude (E)	Elevation (m)
1	43	Disturbed Submontane	Enyandong	ENY	5.09951	9.71801	1024
2	44	Disturbed Submontane	Enyandong	ENY	5.09970	9.71804	1015
3	45	Disturbed Submontane	Enyandong	ENY	5.09970	9.71804	1015
4	46	Disturbed Submontane	Enyandong	ENY	5.10020	9.71806	1001
5	47	Submontane	Muandelengoh	MUA	5.08273	9.71985	1268
6	48	Submontane	Muandelengoh	MUA	5.07808	9.72053	1361
7	49	Submontane	Muandelengoh	MUA	5.08282	9.72044	1265
8	50	Submontane	Muandelengoh	MUA	5.08286	9.72057	1253
9	51	Submontane	Muandelengoh	MUA	5.07546	9.72415	1374
10	52	Submontane	Muandelengoh	MUA	5.07697	9.72034	1414
11	53	Submontane	Muandelengoh	MUA	5.07600	9.72419	1356
12	54	Submontane	Muandelengoh	MUA	5.07670	9.72120	1351

Constraint

We had three main constraints; the weather, the hilly nature of the terrain and the unwillingness of some villagers to work with us. These constraints put together limited our sample size to 12 ha.

Way Forward

- Sorting of plant specimens, preliminary identification using floras, and data entry.
- Survey of Mt Nlonako, sorting of specimens, and data entry
- Studying of Bakossi and Nlonako specimens in detail at the National Herbarium of Cameroon.
- Writing of final report to Rufford.

Field Team

Community members, field Assistants, Consultants, TroPEG members, students on internships, and scientist were directly or indirectly involved in this study.

Village Authorities

Chief Ebah Divine Ndode of Muandelengoh village

Mr. Ntoko Felix Njikang: Chief Council of Enyandong village

TroPEG Members

Saingé Nsanyi Moses, Principal Investigator, Project Coordinator, and Botanist

Ngoh Michael Lyonga, Field Manager, and Botanist

Benedicta Jailughe Saingé, Financial Manager

Mambo Peter Ekole, Herbarium Manager, and Botanist

Consultants

Okere Fredrick Eleli: Project Field Cook

Ebinza Wilfred Nkalle: Field Assistant, Enumeration team

Nwese Joseph Mulango: Field Assistant, Transect cutting team

Njoh Agwetang Lazarus: Field Assistant, Plot establishment team

Bangsi Oliver Agham: Botanist

Motia Alloysius Etapo-Esay: Field Assistant, Enumeration team

Dr. Mabel Nechia Wantim: Production of Topographic and vegetation maps

Students on Internship

Azeh Roy Awasung: Field assistant, Enumeration team

Douandji Douandji Franck Mathaus: Field assistant, Botany team

Community Members

Enongene Ebontane Elvis: Field Assistant, Plot establishment team

Sumbele Celestine Ewanoge: Field Assistant, Transect cutting team

Ngeme Ivo Ngwese: Field Assistant, Transect cutting team

Ndong Neville Agumtong: Field Assistant, Plot establishment team

Ndode Claudine Muke: Assistant field cook

Njikang Felix Ntoko: Field Assistant, Transect cutting team

Ekume Samuel Njikang: Field Assistant, Enumeration team

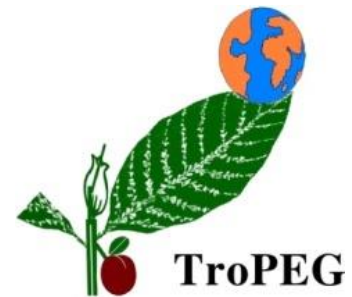
Ntungwe Albert Kwogge: Field Assistant, Plot establishment team
Ekane Samuel Ngide: Field Assistant, Enumeration team
Mbine Festus Ewane: Field Assistant, tree climber, Botany team
Ajang Elvis Ngome: Field Assistant, tree climber, Botany team
Ngome Samuel Njenge: Field Assistant, Plot establishment team
Charles Nkede Edie: Field Assistant, Plot establishment team
Mbwoje Romeo: Porter
Epie Erna Ebude: Village logistician at Muandelengoh village
Ntoko Pamela: Village logistician at Enyandong village
Njikang Vivian: Village logistician at Enyandong village

Drivers

Mr. Ekwoje Epie Felix
Mr. Ekane
Mr. Edgar

Scientific Advisers

Prof. Townsend A. Peterson, Biodiversity Institute. University of Kansas, USA
Dr. Felix Nchu, Cape Peninsula University of Technology, Cape Town, South Africa
Dr. David Kenfack, Smithsonian Tropical Research Institution, USA.





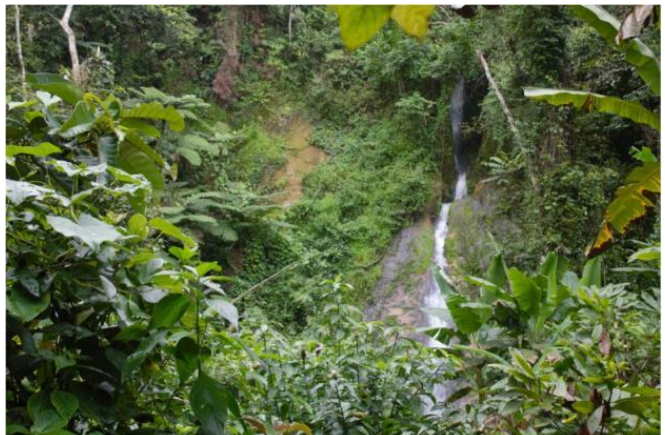
Off Loading food, and Equipment's at Enyandong Village.



Disturbed submontane forest at the Bakossi National Park



Submontane forest at Muandelengoh



Beautiful waterfall at Muandelengoh, BNP



Plot establishment at the Bakossi National Park



Plot establishment at Bakossi National Park



Mountain View from Muandelengoh village (BNP)



Field workers heading to the plot



Plant identification in the field



Pressing of plant specimens



Specimens in plant presses ready for drying.



Beautiful view of the mountain from the plot