

**DEPARTMENT OF BIOLOGICAL SCIENCES**  
**BOT 421**

### **Nigerian vegetation**

Best known vegetations in Nigeria are (1) Savanna and (2) Forest

Forest is vegetation that is dominated by tall, mostly evergreen trees and there is hardly any grass to be found in the undergrowth. The undergrowth of evergreen woody species consist of trees, numerous shrubs and climbers, and few herbs. Fires are seldom seen in forest vegetation because the vegetation is too damp and the humidity too high. Fire lit by man as a prelude to farming could be seen.

### **DIFFERENT FORMS**

Wood land: a lower growing, less dense and less luxuriant vegetation type compared to forest. Commonly seen as savanna wood land (wood land savanna)- a transition between forest and savanna vegetations

**SCRUB** Is formed when the scrub layer or lower tree layer both form a canopy the upper tree layer being sparse and absent. Mostly found in local communities or disturbed ground and several forms are seen e.g scrub woodland, scrub grassland etc.

**Thicket** \_\_\_ described pure local and limited clumps of dense shrub and climbers vegetation and like scrub is usually found where biotic influences are heavy.

**Savanna:** Originally called " savannah" is Caribbean word first used in west indies and South America for grassland with scattered trees. It is used for grassland in which the herbs layer is 2feet 6in high farming a continuous ground cover. Both perennial and annual herbs are plentiful in the bare ground between the grass plants .There could be numerous shrubs up to 30 feet high each.

**Steppe:** Originally a Russian term applied to the treeless temperate land of Russia and Siberia. In Nigeria only the sahel zone has this type of vegetation (eg North – East Nigeria).The sparse grass is less than 2feeth 6 inch.

## VEGETATIO ZONES OF NIGERIA

There are tens namely;

- (a) Mangrove swamp forest
- (b) Dry coastal vegetation
- (c) Fresh water swamp forest
- (d) Moist low land forest
- (e) Forest savanna mosaic
- (f) North guinea savanna
- (g) Sudan savanna
- (h) Sahel steppe
- (i) Mountain vegetation

**Mangrove swamp forest.** Dominated by red mangrove (*Rhizophora racemosa*)

(2) Found in places near the coast that is under the influence of brackish water commonly found in Niger Delta.

(3) Found also in low lying swamp land associated with rivers and Lagoon near the coast and under the influence of sea

(4) Vast quantities of mud or silt brought down by rivers are deposited principally on the banks of the various channels and Lagoons making up the swamp.

(5) The silts fall to the bottom when the flow of river water is checked on meeting the rising tides of the sea. Land building is constantly in progress in these areas, channels becoming shallower, islands rising out of the water, and the land extending seawards, imperfectly but steadily.

(6) All mangrove areas are regularly flooded by sea water.

**(7)** Sea water contains 35grams mineral salts, chiefly common salt (NaCl) in every litre .

**(8)** . Salts content of river is quite low (1 ppm) 1ppm= 0.001gram in 1 litre of water.

(9) Brackish water contains mineral salts in concentrations in term between sea and River waters.

(10.) Soil in the mangrove area is poorly aerated, water logged mud

(11) The saline conditions make water absorption difficult inducing a physiological drought

(12) Mangrove has breathing root that emerges from the brackish water at interval.

(13) Floral of mangrove areas include dominant red mangrove (*Rhizophora sp racemosa*) family Rhizophoraceae) about 30 feet high .though could be higher than this (100ft). Tress regularly felled for fueling. Many number of silts root from the main truck, the silts roots all bearing many breathing pores ( of value for a plant growing in a poorly aerated mud ) Each silt root gives off many fine rootlets , so many that a thick , felted , peaty mat is formed that one may walk over without inconvenience . Both root types give stability to the plant in the soft rising mud. Additional aerial root may be seen hanging from the branches of the tress.

(14) Red mangrove shows xerophytic characteristics in their leaves; small sizes and shapes and anatomically, a thick upper cuticle and water storing tissue.

(15) Viviparity is seen in red mangrove, the fruit s which are 1-seeded berries have the seed germinating while fruits is still hanging on the tress. The radicle emerges from the lower end of the hanging fruit and contains 1-2ft in length. When the seedling falls the seed floats away before being lodged in soil. *Avicennia Africana* is another viviparous species

(16) Species of Red mangrove common in mangrove areas are (a) *Rhizophora racemosa* (Rhizophoraceae) the commonest mangrove can attain 150ft under favourable conditions, but tends to be 30ft high as a rule. It is a pioneer species, its seeds readily occupying newly deposited mud, has many flowers inflorescences with thick petals

(b) *Rhizophora harrisonii* is smll tree or shrub up to 25ft high . occupies a slightly higher and drier ground than *R. racemosa* and its distinguish from *R. racemosa* by having slender pointed flower buds and radicle not more than 6inches long .

(c) *R. mangle* is a shrub or small tree up to 15ft high and occupying the highest and driest ground . Soil here is peaty, well aerated by burrowing of land crabs and earth worms.

(d) Other mangrove species are

(i) *Lanuncularia racemosa*  
*Conocarpus erectus* } Combretaceae

(ii) *Avcennia Africana* ( *Verbenaceae* ) may be seen in great numbers as a shrub near large port or as a large tree in less disturbed habitats near the fishing beaches in creeks and lagoons . Known as white mangrove and occupies higher ground than *R mangle*.

(e) Other flora are

(i) Salt water- fern *Acrostichum aureum* characteristics of the older parts of mangrove swamps.

(ii) *Alteraathera maritime* ( *Amarathaceae* )

(ii) *Hibiscus tiliaceus* ( *malvaceae* )

(iv) *Ipomoea pes- carprae* ( *convalvulaceae* )

(v) *Dalbergia ecastaphyllum* ( *Papilionaceae* )

### **FRESH WATER SWAMP FOREST**

Occurred as scattered local communities while soil condition permits , often in river valleys , found in Nigeria , north of Niger Delta mangrove swamps and around fresh water creeks and lagoons and lakes .

Edaphic conditions are

(i) Water abounds in pools and streams

(ii) Soil is water -logged and poorly aerated and poor nutritionally. Free floating and submerged water plants in quieter brackish water and lagoons. In shallower water rooted species eg water- lily ( *Nymphaea lotus*, *Nymphaeaceae* ) may be seen . The most common species is *Pistia stratiotes*(*Araceae*)

Others are *Vossia cuspidate* (floating grass) –along lagoon shore *Cyperus papyrus* (floating sedge) screw pine (*Pandanus candelabrum*) *Raphia sudanica*. ( *Palmae*) – could dominate lagoon areas of swamp . The common tall trees (over 100ft)are *Alstoniaspp*(*Apocynaceae*) *Spondianthus preussii*, *Naucleaspp*( *Rubiaceae*) (*Euphorbiaceae*) ,*Ficus* sp(*Moraceae*), *Lophira alata*(*Ochnaceae*) Othe rather small tree species of fresh water swamp are (30ft-100ft)

- (I) *Alstoniasp.* (*Apocynaceae*)
- (ii) *Anthosetema aubryanum* (*Euporbiaceae*)
- (III) *Spondianthus preussii* (*Euporbiaceae*)
- (iv) *Berlinia bsp.* (*Caesalpinaceae*)
- (v) *Carapa procera* (*Merliaceae*)
- (vi) *Grewia coriacea* *Tiliaceae*)
- (vii) *Uapaca spp* *Euporbiaceae*)

## **MOIST LOWLAND FOREST**

Greatest parts of the forests areas is covered by this kind of vegetation and it constitutes what is popularly thought of as forest. former names includes rain forest lower rain forest , wet or dry evergreen forest , moist semi deciduous forest mixed deciduous forest and closed or high forest. A great deal of lowland forest has been disturbed at one time or the other , usually by farming or by felling .so no forest is truly primary forest in the sense that it has never being disturbed by man . Much of this forest is either farmland under cultivation or fallow land. As such term such as bush fallow forest re-growth

and secondary forest are supplied regularly. Mature high forest refers to secondary forest of sufficient age to resemble closely primary.

Mature high forest: The structure of storeyed layers consist of

I emergent tree species (over 120ft high)

li upper storey tree species (over 60-120ft high)

lii lower storey tree species (over 15-120ft high)

Iv shrub layer tree species (over 6-15ft high)

V herb layer tree species (less than 6ft high)

Epiphytes abound e.g loranthus in the crowns of lower storey and lower parts of the upper storey.

Climbers are common.

Forest is predominantly evergreen, though number of deciduous species increases towards the northern boundary of the forest.

Emergent species may be either evergreen or deciduous.

Common evergreen are *Lophira alata* and *Tarrietia utilis*

While common deciduous are *Chlorophora excelsa* (milicia) and *Triplochiton sclereoxylon* other emergent and upper storey species are

I *Ceiba pentandia* (Bombacaceae)

li *Cynometra ananta* (caesalpiniaceae)

lii *Erythrophleum ivorense* (caesalpihiaceae)

Iv *Lophira alata* (sapotaceae)

V *Tarrietia utilis* (sterculiaceae)

Vi *Terminalia superba* (combiaceae)

Lower storey species: This include Diospyris sp. (Ebenaceae) e.g  
D.mespiliformis caloncoba spp. (Flacourtiaceae) e.g  
C.Echinata,C.gilgiana,C.glauca.

The shrub layer of mature forest is evergreen.

Two types of shrubs exist;

One in which branching takes place close to the ground, so that there is no single main stem, and the other in which there is a distinct main axis, making the shrubs resemble small trees (called treelets)

Treelets are usually 10ft high, not more than 6ins in girth, being similar in size to saplings of taller trees which also form part of the shrub layer.

Common seen tree lets are

Angylocarlyx oligophyllus( Papilionaceae)

Chytranthus macrobotrys (sapindaceae)

Vernonia conferta (compositae)

Secondary Forest: This develops whenever the storeyed structure of the forest is disturbed,whether by felling or farming or by the fall of aged and decayed trees during storms.

Forest savanna mosaic consisted of

(I) Inland forest savanna mosaic

(ii )Coastal forest savanna mosaic

(iii) Derived savanna

Consists of some savanna, usually containing forest species as well.

Oil palms are plentiful and regenerate readily (distinctive feature of the zone)

The origin of forest savanna mosaic savanna could have been derived from forest by cleaning, felling, and burning.

Grass species commonly present are

(I) *Andropogon* sp

(ii) *Imperata* sp

(iii) *Hyparrhenia* sp

(iv) *Ctenium newtonii*

(V) *Monocymbium cerasiiforme*

Woody species are fire-tolerant, with thick, corky bark and are deciduous.

Southern Guinea Savanna

Consist of open woodland savanna with tall grasses up to 15ft high in the rains.

There is fire which burns fiercely in the dry season.

Grass species are;

*Andropogon* spp, *Andropogon tectoreum*

*Pennisetum* spp, *Pennisetum purpureum*

*Ctenium nubicum*, *Panicum maximum*

Scattered trees and shrubs present and these are deciduous.

There is two storey canopy which is broken at intervals where grasses and herbs survive.

The taller tree species are more than 20ft high (up to 50ft).

The smaller tree species are between 6 and 20ft.

The shrubs are up to about 10ft high.



Oil palms are confined to the forest outliers in the stream valleys.

Tree species include

*Anogeissus leiocarpus* (Combretaceae)

*Cussonia barteri* (Araliaceae)

*Parkia clappertoniana* (Mimosaceae)

*Terminalia* spp (Combretaceae)

*Vitex doniana* (Vitaceae)

Shrub species (which may grow as small trees) include

*Annona senegalensis* (Annonaceae)

*Oncoba spinosa* (Flacourtiaceae)

*Ximenia Americana* (Olacaceae)

*Albizia zygia* (Mimosaceae)

*Cola millenii* (Sterculiaceae)

*Azelia Africana* (Caesalpiniaceae)

*Parinari kerstingii*

*Terminalia macroptera* (Combretaceae)

*Acacia gourmaensis* (Mimosaceae)

*Albuca nigritans* (Liliaceae)

*Nauclea latifolia* (Rubiaceae)

*Combretum* spp (Combretaceae)

*Terminalia avicennioides* (Combretaceae)

*Hymenocardia acida* (Euphorbiaceae)