

Floristic (Botanical) Region of India

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Introduction

- As Indian sub-continent is characterized with a variety of climate types, flora of the country is also correspondingly of different types in different parts.
- For study of flora , the country has been divided in to the following nine floristic region:

- 1. Western Himalayas
- 2. Eastern Himalayas
- 3. West Indian Deserts
- 4. Gangetic Plain
- 5. Assam
- 6. Central India
- 7. Malabar
- 8. The Deccan
- 9. Andamans

Western Himalayas

- It extend from central region of Kumaon to north west region of Kashmir.
- Attitudinally there are three zones of vegetation corresponding to three climatic belt:
- (1). Submontane or lower region
- (2). Temperate or montane zone
- (3). Alpine zone

Submontane lower region

- It is represented from about 1,000 to 5,000 ft, above the sea level in region of Shiwaliks and adjacent areas.
- The forest is dominated by timber trees of *Shorea robusta*, *Dalbergia sisso*, *Cedrela tonna*.
- In dry belt towards the west *Zizipus*, *Carissa*, *Acacia etc.* with thorny succulent eubhohbias on slop.
- *Pinus roxburghii* begins to appear at 3000 to 5000 ft.

Temperate or montane zone

- It represented from 5,000 to 11,675 ft above sea level.
- At about 5,500 ft. *Pinus longifolia* is generally replaced by *P. excelsa*.
- In the inner Himalayas in Kashmir, *Betula* (birch), *Salix* (cane) and *Populus* (poplar) are dominant.
- At the higher altitudes, *Aesculus indica*, *Quercus semecarpifolia*, *Q. dilatata* alongwith the conifers such as *Abies pindrow* *Picea morinda* *Taxus baccata* etc. are most common component of vegetation.

Alpine zone

- It is the limit of tree growth at 12,000 ft. known as timber or tree line, where the plant height is considerably reduced.
- Plants are mostly dwarfed and cushion shaped shrubs and grasses.
- On lower levels of this zone, some rhododendrons, *Betula utilis* and small junipers present

- Above this zone there are present many types of herbs with short period vegetative growth and flowering. These include *Primula*, *Potentilla*, *Polygonam*, *Geranium*, *Saxifraga*, *Aster* etc.

Eastern Himalayas

- It consist of regions of Sikkim and extends in the east up to NEFA.
- The eastern Himalayas have more tropical elements, greater variety of oaks and rhododendrons and less of conifers than the western Himalayas
- The chief differences are the higher rainfall and warmer conditions in this part.

- Altitudinally there are three zones of vegetation corresponding to three climatic belt in eastern Himalayas
- (1) Submontane zone.
- (2) Temperate zone.
- (3) Alpine zone.

Submontane zone

- It extends from the plain foot of the hill up to 6000 ft. altitude.
- Due to warm and humid weather it is typically tropical with dense forests of *Shorea rubusta*.
- Mixed forests of deciduous trees like *Sterospermum*, *Cedrela toona*, *Bauhinia*, *Anthocephalus cadamba* are predominant
- Tall trees like *Albizzia procera*, *Salamalia*, *Dendrocalamus* (bamboo), are important.

Temperate zone

- It range from 6,000 to 12,000 ft. altitude above the sea level.
- The lower region has several species of oaks, such as *Quercus lamellosa* and *Q. lineata*, *Michelia*, *Cedrela* and *Eugenia*.
- The upper region which has cooler, has such conifers as *Juniperus*, *Cryptomeria*, *Picea*, *Abies* and *Tsuga*.
- Some rhododendrons are also common at high elevation.

Alpine zone

- It is above 12,000 ft. where vegetation is devoid of trees.
- Shrubby growth of Juniperus and Rhododendron is found in grassy areas.

West Indian desert (Indus plain)

- This region consists of parts of Rajasthan, Kutch, Delhi and part of Gujarat.
- The climate is characterized by very hot and dry summer, and cold winter.
- Rainfall is less than 70 cm.
- The plants are mostly xerophytic, such as *Acacia nilotica*, *Prosopis spicifera*, *Salvadora oleoides*, *Capparis aphylla*,
- The ground vegetation is mostly represented by small *Calotropis sp.* *Panicum antidotale*.

Gangetic plain

- This region comprising Uttar Pradesh, Bihar and Bengal is most fertile region.
- The chief climatic factors, the temperature and rainfall together are responsible for distinct type of vegetation.
- The rainfall is less than 70 cm. in west U.P., being more than 150 cm in Bengal.
- Vegetation is chiefly of tropical moist and dry deciduous forest type.
- In north west U.P., near foothills of the Himalaya *Delbergia sissoo* and *Acacia nelotica* are most common.

- In south west U.P., there are desert areas, where characteristic species are *Capparis aphylla*, *Saccharum munja*, etc.
- In eastern U.P., *Butea monosperma* *Madhuca indica*, *Terminalia arjuna*, *Bachanania lanzan* etc.
- In Gangetic delta region extreme swampy and halophytic vegetation is common, where dominant species are *Rhizophora mucronata*, *R. conjugata*, *Ceriops roxburghiana* etc.

Assam

- This region receives the heaviest rainfall, with Cherrapunji as much more than 1000 cm.
- The temperature and wetness are very high, which are responsible for tropical ever green forest.
- Some of the important trees are *Dipterocarpus macrocarpus* *Shorea robusta*, *Sterculia alata* and insectivorous plants like *Nepenthes* sp. Are also present.
- In hilly area, some conifers like *Pinus khasiya* and *P. insularis* are also present.

Central India

- It comprises Madhya Pradesh, parts of Orissa, and Gujarat.
- Depending upon the amount of rainfall, forests have developed in to thorny, mixed deciduous and Sal types.
- The forest vegetation is chiefly constituted by *Tectona grandis*, *Diospyros melanoxylon*, *Butea monosperma*, *Delbergia latifolia*.
- The thorny vegetation consists of *Carissa spinarum*, *Ziziphus rotundifolia* *Acacia catechu* etc.

Malabar

- This region comprises the western coast of India extending from Gujarat in the north to the Cape Camorin in the south.
- Rainfall is heavy (200-250 cm).
- The vegetation is of four types:
 - (1) Tropical moist evergreen forest.
 - (2) Mixed deciduous forests.
 - (3) temperate evergreen forests.
 - (4) Mangrove forests

- The tropical wet evergreen forests are very luxuriant and multistoreyed, with such tall trees as *Dipterocarpus indicus*, *Dalbergia latifolia*, Bamboos, like *Dendrocalamus strictus* are present.
- In the Nilgiri hills, there are temperate evergreen forests of such trees as *Eurya japonica*, *Michelia nilagirica* are present.

The Deccan

- It includes Andhra Pradesh, Tamilnadu and Karnataka.
- This region is drier with rainfall of about 10 cm.
- It has central hilly plateau with forests of *Bowellia serrata*, *Tectona grandis* and *Hardwickia pinnata*.
- Lower eastern dry Coromandal coast, with tropical dry evergreen forests of *Santalum album*, *Phyllanthus*, *Euphorbia* sp.

Andamans

- It has a wide range of spreading coastal vegetation like mangroves, beach forests and in the interior evergreen forests of tall trees.
- Important species of the island are *Rhizophora*, *Calophyllum*, *Dipterocarpus* *Manusops* etc.
- Most of the area is now cleared for paddy and sugarcane cultivation.

Thank You