

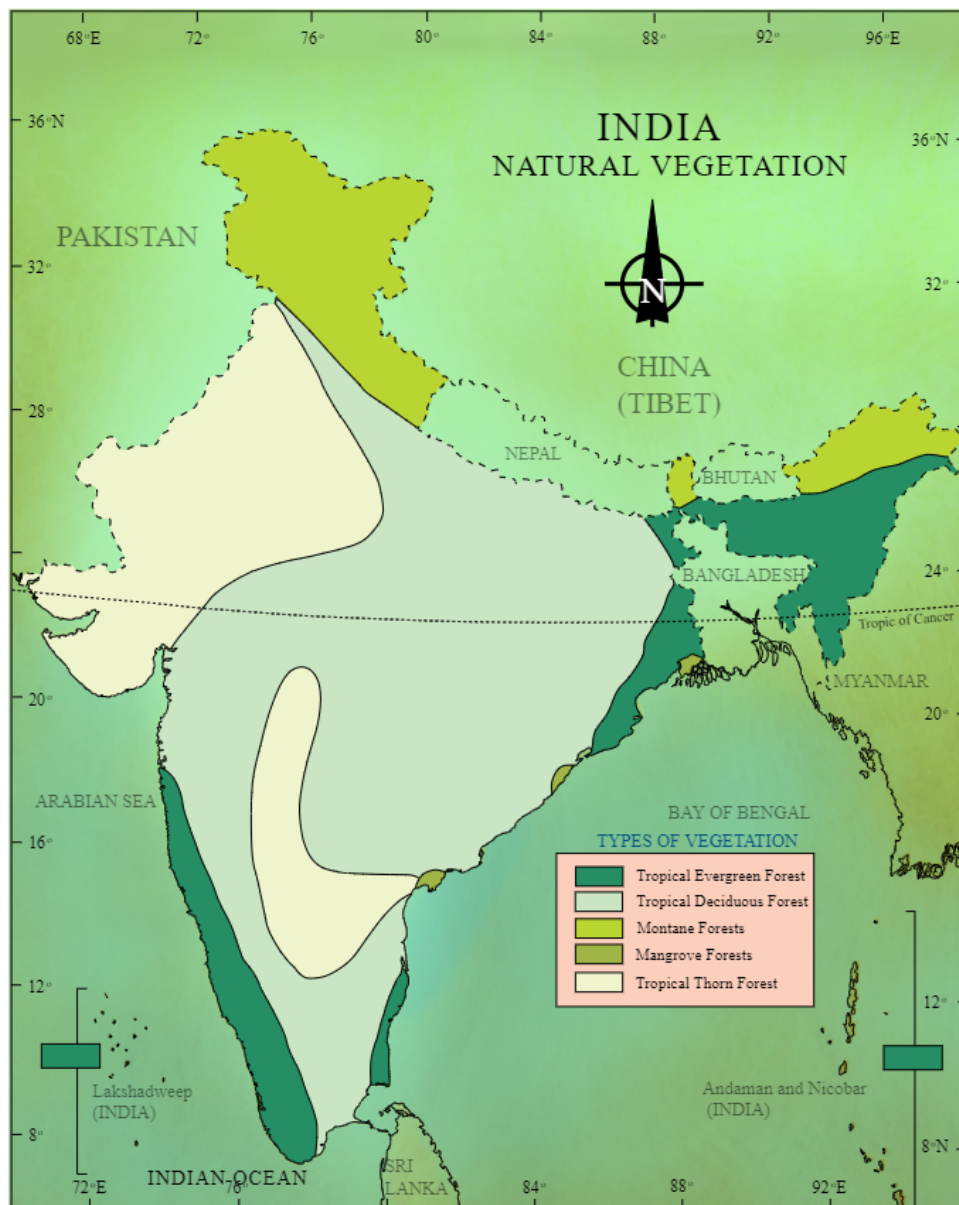
## **VEGETATION OF INDIA**

Distribution of natural vegetation in India is controlled and regulated by the following factors:

1. Distribution of rainfall
2. Orography (altitude and slope of the region)

Based on these factors, the natural vegetation of India is broadly classified into the following categories:

1. Tropical Evergreen and Semi-Evergreen Forests
2. Tropical Deciduous Forests
3. Tropical Thorn Forests and Scrubs
4. Montane Forests
5. Mangrove Forests



### Tropical Evergreen and Semi-Evergreen Forests

- Constitute those parts of India which have **an annual rainfall of 200 cm and above**.
- The rainfall here occurs almost throughout the year with a short dry season.
- Wet and warm climate support luxuriant vegetation of all kinds- trees, shrubs and creepers giving it a multi-layered structure.
- Trees do not shed leaves for a definite time period. So, the forests appear green all-round the year.
- Some of the commercially available trees are **Sandal Wood, ebony, mahogany, rosewood, rubber, cinchona etc.**
- Important animals in these forests are elephants, monkey lemur, deer, one-horned rhinoceros etc.
- Western coast; Western Ghats; island groups of Lakshadweep, Andaman and Nicobar; upper parts of Assam; and Tamil Nadu coast are covered with these forests.
- These are similar to Equatorial rainforests.

## Tropical Deciduous Forests

- These are the **most widespread and the most extensive forests of India**.
- They are also known as **monsoon forests**.
- These are connected with those parts of India which receive **annual rainfall between 200 cm and 70 cm**.
- Here rainfall is seasonal in nature.
- In this forest type, trees shed their leaves for about six to eight weeks in dry summer.
- The animals found in these are *lion, tiger, pig, deer, elephant, a variety of birds, lizards, snakes, tortoise, etc.*

## Tropical Moist Deciduous Forests

- Annual rainfall between 200 & 100 cm.
- Found in: (a) an eastern part of India- north eastern states, along with the foothills of Himalayas, (b) Jharkhand, West Orissa and Chhattisgarh, (c) on the eastern slopes of the Western Ghats.
- **Examples: teak, bamboos, sal, shisham, sandalwood, Khair, Kusum, Arjun, mulberry, etc.**

## Tropical Dry Deciduous Forests

- Annual rainfall between 100 & 70 cm.
- Found in: (a) the rainier parts of the peninsular plateau and (b) the plains of Uttar Pradesh and Bihar.
- **Examples: teak, sal, peepal, neem etc.**

## Tropical Thorn Forests

- These are connected with those parts which receive rainfall less than 70 cm.
- Here, rainfall is erratic, irregular and inconsistent.
- Xerophytes dominate regions covered with the tropical thorn.
- Found in the north-western part including semi-arid areas of Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, Uttar Pradesh and Haryana.
- Main plant species here are **acacias (babool), palms, euphorbias, Cactus, Khair, keekar etc.**
- In this vegetation type, stem, leaves and roots of plants are adapted to conserve water.
- The stem is succulent, and leaves are mostly thick and small to minimize evaporation.
- Common animals here are rats, mice, rabbits, fox, wolf, tiger, lion, wild ass, horses, camels, etc.

## Tropical Montane Forests

- The decrease in temperature with the rise in altitude is responsible for the corresponding change in natural vegetation.
- There exists the same hierarchy from foothills of the mountain to the top of it as is observed from tropical to tundra region.
- Mostly found in the southern slopes of Himalayas, places having high altitude in Southern and North eastern India.

- Upto 1500 m of height, tropical moist deciduous forests exist with **Sheesham** as the main tree.
- Between 1000-2000m of height, wet temperate type of climate persists wherein evergreen broad-leaf trees like *oaks and chestnut*
- Between 1500-3000 m of height, temperate forests are covering coniferous trees like **Chir, pine, deodar, silver fir, spruce, cedar, etc.**
- At higher altitudes above 3500m wet temperate grasslands are common like **Merg (Kashmir), bugyals (Uttarakhand), etc.**
- They get progressively stunted as they approach the snowline.
- Ultimately though shrubs and scrubs, they merge into Alpine grasslands.
- These grasslands are extensively used for grazing by nomadic tribes like **Gujjars and Bakkarwals**.
- At higher altitudes, some vegetation mosses and lichens form part of tundra vegetation.
- Common animals that are found in these forests are **Kashmir stag, spotted deer, wild sheep, jackals, yak, snow leopard, rare red panda, sheep and goats with thick fur, etc.**
- In India, there are studied under two groups: Northern Montane Forests and Southern Montane Forests.
  - **Northern Montane Forests:** These are connected with Himalayan Mountain ranges. Vegetation types are controlled by sunlight, temperature and rainfall, which is described above.
  - **Southern Montane Forests:** These are connected with hills of **Nilgiris, Anaimalai and Cardamom**. These are wet temperate forests which have great endemic biodiversity, and these are described as Shola forests.

## Mangrove Forests

- Mangrove forests are connected with deltaic regions of tropical and sub-tropical zones.
- These are also known as **tidal forests, and littoral forests** as these are connected with the inter-tidal region.
- Their biodiversity and forest density are comparable with equatorial rainforest and tropical evergreen and semi-evergreen forests.
- Mangroves are salt-tolerant plants with roots being adapted to become **pneumatophores** (these roots emerged from the ground and grow in the upward direction).
- Mangrove ecosystem is a unique ecosystem as it has tolerance for periodic flooding and dryness, and mild salinity as well.
- India has the largest cover of Mangrove Forest in the world.
- Sunderban, Mahanadi, Godavari-Krishna and Kaveri delta are most importantly covered with these forests.
- Sunderban is the largest mangrove in the world. It is famous for **Sundari tree** which provides durable hard timber.
- Some other examples are **Rhizophora, Avicennia** etc.
- Palm, coconut, keora, agar, etc. also grow in some parts of the delta.
- Royal Bengal Tiger is a famous animal in these forests.
- Turtles, crocodiles, gharials, snakes, are also found in these forests.
- Bhitarkanika mangrove of Mahanadi delta is also famous for its rich biodiversity.