

# Natural Vegetation of India

## Natural Vegetation

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Natural vegetation is vegetation which grows in the region all by itself without the interference of human activity. There is a thin line of difference between flora and forests.

Flora refers to the listed species of plants. Forest refers to a large tract of land covered with trees and shrubs.

Natural vegetation of a region is influenced by several factors such as temperature, rainfall and altitude. India has a variety of forests and natural vegetation which differ from region to region.

### Tropical Evergreen Forests

**Climatic Conditions:** The tropical evergreen forests grow in regions which receive more than 250 cm of annual rainfall. The average annual temperature ranges between 25°C and 27°C.

**Distribution:** These forests are found in areas of heavy rainfall in the Western Ghats, the Lakshadweep, the Andaman and Nicobar Islands, upper parts of Assam and the coast of Tamil Nadu.



All the trees in the evergreen forests do not shed their leaves at the same time. Hence, they always appear green.

#### Characteristic Features

- Trees in the tropical evergreen forests may reach up to the height of 60 metres or more. There is rich growth of plant life because the region receives more than 200 cm rainfall.
- There is no definite season for plants to shed their leaves. All trees do not shed their leaves at the same time. Hence, these forests always appear green.

#### Important Species of Trees and their Uses

- Rosewood: It is used for making furniture and is used as decorative wood for carving and for making ornamental ply boards.
- Ebony: It is used for ornamental carving and for making musical instruments, sports goods, piano keys and caskets.
- Chaplas: It is used for ship building and making furniture and packing boxes.
- Gurjan: It is used for construction work, for making packing boxes, tea boxes, panelling and flooring. It is also used for carriage and wagon construction.
- Telsur: It is used for making bridges, boats and carts.
- Sissoo: As the wood is hard and heavy, it is used in construction, furniture making and for making bullock carts, agricultural implements and musical instruments.
- Toon: It is used for making tea boxes, toys and furniture.

### Tropical Deciduous Forests

**Climatic Conditions:** These forests grow in regions which receive rainfall between 200 cm and 100 cm. The annual temperature varies from 24°C to 27°C.

**Distribution:** These forests are found in West Odisha, eastern slopes of the Western Ghats, Chhattisgarh, Jharkhand and northeastern states of the country.

#### Characteristic Features

- These forests are also known as monsoon forests. These forests are largely found in India.

- Based on the availability of water, these forests can be classified into moist deciduous forests and dry deciduous forests.
- The trees of the forest shed their leaves from six to eight weeks to conserve water.
- Tropical deciduous forests are commercially exploited and provide valuable timber.

### Important Species of Trees and their Uses

- **Sal:** It is used for making beams, doors and window posts.
- **Teak:** It is hard and durable and thus is used in construction, ship building, making furniture, railway carriages and bridges.
- **Shisham:** Its wood is hard and durable. It is used in construction, furniture making and for making bullock carts, agricultural implements and musical instruments. It is also used for decorative ornamental carving.
- **Mahua:** Oil is extracted from its fruit, while wine is made from its flowers.
- **Palas:** Its leaves are used for rearing shellac worms.
- **Semul:** As its timber is soft and white, it is used for making toys, packing cases, match boxes and plywood. A soft fibre is yielded from its fruit which is used in pillows.
- **Sandalwood:** It is used for making statues and ornamental objects. It is used in making aromatic substances and for extracting sandalwood oil. It is in great demand in India and abroad.
- **Khair:** Its hard wood is used for making ploughs, handles for knives, daggers and swords.
- **Axlewood:** It is used for making furniture, kitchen cabinets, radio and TV cabinets and wardrobes.

### Differences between evergreen and deciduous forests:

| Tropical evergreen forests                                                                                                                                       | Deciduous forests                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Tropical evergreen forests are found in regions which receive more than 200 cm of rainfall.                                                                      | Deciduous forests are found in regions which receive rainfall of 200–70 cm.                               |
| The trees of the tropical evergreen forests do not shed their leaves at the same time as there is no particular season for shedding leaves.                      | The trees of the deciduous forests shed their leaves for about six to eight months during the dry season. |
| The tropical evergreen forests are dense.                                                                                                                        | These forests are less dense.                                                                             |
| These forests are found in the Andaman and Nicobar Islands, the Lakshadweep, upper parts of Assam and Tamil Nadu and on the western slopes of the Western Ghats. | These forests are found in the northeastern states, parts of central India, West Odisha and Chhattisgarh. |
| Some species of trees are ebony, mahogany, rosewood and rubber.                                                                                                  | Some species of trees are sandalwood, teak and sal.                                                       |

### Tropical Desert Forests

**Climatic Conditions:** This vegetation occurs in regions which receive less than 70 cm of rainfall. The temperature ranges between 25°C and 27°C.

**Distribution:** This kind of vegetation is found in the northwestern parts of India such as semi-arid regions of Gujarat and Rajasthan. It is found in southwestern Punjab, Uttar Pradesh, Haryana, Madhya Pradesh, Chhattisgarh and parts of Maharashtra, Karnataka and Andhra Pradesh.

### Characteristic Features

- The trees are stunted with large patches of coarse grasses.
- Plants have long roots which go out deep into the soil in search of water. Leaves are waxy, small and thick to reduce transpiration.
- Main species of trees are acacias, palms, euphorbia and cacti.

### **Important Species of Trees and their Uses**

- Ber: Its fruit is used for making beverages and pickles. Its wood is used for boat ribs, agricultural implements and charcoal.
- Babool: The tree's bark and gum have medicinal value.
- Date palm: It is used as an astringent. Its syrup is used for treating sore throat, cold and fever.
- Neem: It has medicinal properties. It is effective in treating diabetes, allergies, ulcers and several other diseases.

### **Littoral Forests**

**Climatic Conditions:** These forests are found in wet marshy areas, in river deltas and swampy areas along the sea coasts.

**Distribution:** They are mainly found in the deltas of large rivers on the eastern coast and in saline swamps of the Sundarbans in West Bengal and the coastal areas of Andhra Pradesh and Odisha.

#### **Characteristic Features**

- These forests have evergreen species of trees generally varying in height.
- The trunks of trees are supported by several stilt roots which are submerged under water. There is also a rich growth of climbers.

#### **Important Species of Trees**

- Some important species of trees are keora, amur, sundari, bhara and canes.
- Mangrove trees are used for fuel.
- Sundari trees are used for construction purposes and in boat making.

### **Montane Forests**

Montane forests grow in the mountainous regions. As the temperature decreases with an increase in height, there is change in the cover of natural vegetation on altitude. Montane forests can be divided into two types—Northern Montane forests and Southern Montane forests.

#### **Northern Mountain Forests**

The Northern Montane forests include the Himalayan moist temperate forests, Himalayan dry temperate forests and Alpine forests.

#### **Himalayan Moist Temperate Forests**

**Climatic Conditions:** They are found in regions which receive rainfall between 100 cm and 300 cm. The temperature ranges between 12°C and 13°C.

**Distribution:** These are found in the Himalayan zone from Kashmir to Sikkim and Arunachal Pradesh.

#### **Characteristic Features**

- These forests have mixed species of broad-leafed evergreen trees and conifers.
- These forests also contain scrubs, creepers and ferns.

#### **Important Species of Trees**

Some important species of trees are oak, fir, spruce, deodar, cedar, maple, yew and birch. The timber of the forests is used for commercial purposes.

#### **Himalayan Dry Temperate Forests**

**Climatic Conditions:** These forests occur in areas receiving less than 100 cm rainfall and are found at a height above 1500 m.

**Distribution:** They are mainly found in Ladakh, Chamba, Sikkim and in the inner Garhwal regions.

Important Species of trees are ash, junipers, maple and oak. The timber obtained from these forests is used for construction work and for making light furniture.

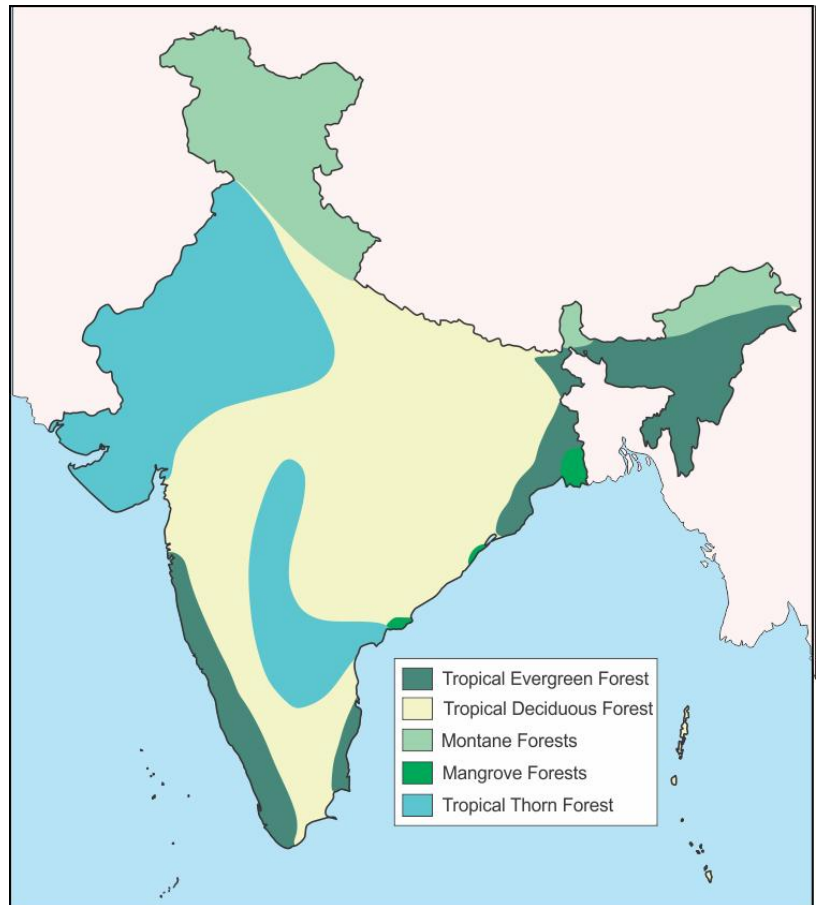
## Alpine Forests

**Climatic Conditions:** These forests are found at an altitude of 2800–4000 m.

**Distribution:** These forests are found in high altitudes of the Himalayas running from the northwest to the northeast frontiers.

### Characteristic Features

- Deciduous forests are found at the foothills of the Himalayas.
- Between the heights of 1000 to 2000 m, wet temperate types of forests are found. Trees are broad leaf such as oak and chestnut.
- Temperate forests are found at 1500–3000 m. Coniferous trees pre-dominate in this region. Pine, cedar, fir, deodar and spruce are some important species of trees. These forests are found in the southern slopes of the Himalayan mountains.
- At higher altitudes, temperate grasslands are found.
- Above 3600 m, Alpine vegetation can be found. Silver fir, pines, junipers and birches are some important species of trees. However, at still higher latitudes, their growth is stunted.
- At higher altitudes, mosses and lichens are found which forms part of the Tundra vegetation.



Map showing the distribution of natural vegetation in India

Important species of trees are silver juniper, pine, birch, chestnut, oak and fir.

The trees yield valuable timber which is used for making furniture, wood pulp and plywood.

## Southern Mountain Forests

**Climatic Conditions:** They are found in regions receiving annual rainfall of more than 150 cm. The temperature of the region ranges between 18°C and 24°C.

**Distribution:** These forests are found in the Vindhyas, Nilgiris and Western Ghats.

### Characteristic Features

- These forests have both tropical and temperate vegetation.
- It is because the hilly regions located closer to the tropics have temperate vegetation, while lower regions of the Western Ghats have sub tropical forests.

Important species of trees are laurel, wattle, plum and magnolia.

### Uses of Some Important Species of Mountain Trees

- **Deodar:** It is used for construction work.
- **Chir:** The wood is reddish brown and is used for making tea chests, furniture and match boxes.
- **Blue Pine:** It is used for making doors, windows and furniture.
- **Spruce:** Its soft wood is used for construction work and for making cabinets, match boxes and furniture.

- **Walnut:** Its wood is used for making musical instruments and cabinets. It is mostly used in Kashmir and North India for carving. It is also used for gun stocks.
- **Birch:** It is used for making furniture, plywood and radio cabinets.
- **Cypress:** It has durable wood which is used for making furniture.
- **Jamun:** It is used for making furniture and cabinets, and in construction.

## Forests and Environment

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Forests affect our environment in the following ways:

- They play an important role in controlling humidity, temperature and precipitation.
- They help in maintaining the purity of air by absorbing carbon dioxide.
- They control soil erosion, soil degradation and prevent droughts and floods.
- Forests help in water percolation.
- Decayed leaves of plants provide humus to the soil and increase its fertility.
- They provide habitation to plants and animals.

Many factors have resulted in the depletion of forest cover or deforestation. Some of these are

- Rapid growth of population has resulted in clearing land for cultivation activities
- Many forests have been cleared to convert them into pasture lands
- Overgrazing
- Increasing demand for timber for industrial expansion and urbanisation
- Construction of multipurpose river valleys has led to the submergence of lands and destruction of forests

## Conservation of Forests

Some forest conservation methods are

- Afforestation or special programmes like 'Van Mahotsav' should be launched and celebrated on a large scale. This will create awareness among the people regarding the protection of forests. One of the other ways of making people aware is the celebration of festivals should begin with a tree plantation.
- The government should cautiously give permit to contractors for the cutting of timber.
- One of the ways in which tribals protect the forests is by declaring a large patch of forests as 'sacred groves'. Because these are worshipped by the government, trees in the sacred groves are considered sacred and are not allowed to be cut.
- An important factor which contributes towards the conservation of forests is the Joint Forest Management (JFM). Local communities are involved in the management of degrading forests. This programme has been in existence since 1998. Because local communities undertake the responsibility of forest protection, they are given rights to use non-timber products and get a share in timber harvests by successful protection of forests. States such as Odisha and Gujarat have been practising forest conservation through JFM.
- Developmental activities should be environment-friendly. If timber is required for any project, then the same or more number of trees which are felled should be planted.
- Building of many multipurpose dams also leads to the submergence of land and forest area. Building of small check dams and reservoirs goes a long way not only in providing water to farmers for irrigation but also in recharging the groundwater. This will ensure that forest cover is not depleted because of the building of large dams.
- Using alternative sources of energy such as solar energy, wind power and tidal energy results in saving wood which is commonly used as a source of energy in the rural areas.

## National Forest Policy

The National Forest Policy was adopted in 1952 by the government of India. The policy gives importance to sustainable forest management to conserve forests. Important objectives of the National Forest Policy are

- To maintain the stability of the environment by preservation and restoration of ecological balance
- To check soil erosion and denudation in the catchment areas of rivers, lakes and reservoirs
- To increase the productivity of forests to meet essential national needs
- To create people's movement on a large-scale involving women for preserving forests
- To conserve natural heritage of the country by preserving natural forests, flora and fauna.

## Social Forestry

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Social forestry refers to the management and protection of forests with the help of local communities. Three components of social forestry are

- To recognise, restore and reallocate the forest lands to the inhabitants for the management and protection of forests.
- The forest department works in close cooperation with local communities.
- To develop the required social and economic system to achieve the above aims.

### Important Objectives of Social Forestry

- To provide wood, fodder, timber and other minor forest produce to rural people
- To develop local cottage industries by providing raw materials
- To conserve soil and water
- To increase agricultural production by using cow dung as manure

### Features of Social Forestry

- Planting trees with the help and support of local communities
- Using fallow lands to take away the pressure on forest lands
- Practising sustainable forestry with short crop rotation
- Distributing the benefits derived from various projects based on forestry among local communities

## Agro Forestry

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Agro forestry is an agricultural practice which involves the cultivation of trees. It is a land management system in which trees or shrubs are planted and grown among crops or in pasturelands.

### Objectives of Agro forestry

Objectives of agro forestry are

- To make the best use of all the available resources such as soil
- To obtain various forest products and agricultural crops on the same piece of land
- To check the possibility of soil erosion and floods by planting trees in crop lands
- To maintain the ecological balance along with proper use of farm resources

In traditional forestry, only trees are grown; however, in agroforestry, trees along with crops are planted. Agro forestry is also able to withstand the pressure of increasing population unlike traditional forestry. Agro forestry is a scientific system of managing land with the help of local communities which is absent in traditional forestry.