



Types of Forests in India

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Introduction

- **Definition of Forest:**

- At present, in India, there is no clear nationally-accepted definition of 'forest'.
- States are responsible for determining their definition of forests.
- The prerogative of the states to define forests stems from a 1996 Supreme Court order called the **T.N. Godavarman Thirumulkpad vs the Union of India** judgment.
 - In the judgement, the Supreme Court interpreted that the word "forest" must be understood according to its "dictionary meaning".
 - This description covers all statutorily recognised forests, whether designated as reserved, protected or otherwise.

- **Constitutional Provisions:**

- Forests are included in the **Concurrent List** in the (Seventh Schedule) of the Constitution of India.
- Through the **42nd Amendment Act**, 1976 Forests and Protection of Wild Animals and Birds were transferred from State to Concurrent List.
- **Article 51 A (g)** of the Constitution states that it shall be the **fundamental duty** of every citizen to protect and improve the natural environment including forests and Wildlife.
- **Article 48 A** in the **Directive Principles of State policy**, mandates that the State shall endeavor to protect and improve the environment and to safeguard the forests and wildlife of the country.

- **Statute:**

India's forests are currently governed by the **National Forest Policy, 1988** which has environmental balance and livelihood at its centre.

- **Forestry Report:**

- According to **India State of Forest Report, 2019**, tree and forest cover together made up 24.56% (8,07,276 sq km) of India's area.
- The country is pursuing a long-term goal of having 33 percent of its land under forest cover.

Classification of Forests

On Administration-Basis

Reserved Forests	Protected Forests	Unprotected Forests
Under direct supervision of the Government.	Looked after by the government.	Unclassified Forests.
No public entry allowed for the commercial purpose of cattle grazing.	Local people are allowed to collect forest produce and cattle grazing without causing any serious damage.	No restriction on cutting trees or grazing cattle.
53% of the Total Forest Area (TFA) of the country under this category.	Occupy about 29% of the TFA.	Occupy 18% of the TFA.

Classification as per Constitution of India

State Forests	Commercial Forests	Private Forests
Include almost all important forest areas of the country and are under full control of the government (state/central).	Owned and administered by local bodies (municipal corporations, village panchayats, district boards etc.)	Under private ownership.
Cover almost 94% of the TFA.	Cover 5% of the TFA.	Cover slightly more than 1% of the TFA.

On Merchantability

Merchantable	Non- Merchantable

Forests that are accessible.	Forests that are situated at high mountainous peaks; non accessible.
Cover 82% of the TFA.	Cover 18% of the TFA.

Based on Composition

Coniferous Forests	Broad-Leaf Forests
Temperate Forests	Tropical and subtropical monsoon forests.
Found in middle and upper elevations of the eastern Middle Himalayas and N-E Indian states like Arunachal Pradesh.	Found in the plateaus, plains and mountainous areas of the country.
Cover 6.50% of the TFA of the country.	Cover about 94% of the TFA of the country.

Based on Average Annual Rainfall

In India, the Forests, on the basis of average annual rainfall, can be categorised broadly into five categories:

Tropical Evergreen Forests

- **Moist Evergreen Forests:**
 - **Region:** Found in southern India along the **Western Ghats, Andaman and Nicobar Islands** and **north-eastern region**.
 - **Climatic Conditions:** Found in **warm and humid areas** with an annual precipitation of over 200 cm and mean annual temperature above 22°C.
 - **Trees:** In these forests, trees reach great heights up to 60 m or above.
 - There is no definite time for trees to shed their leaves, flowering and fruition; **these forests appear green all the year round**.
 - Species found in these forests include Rosewood, Mahogany, Aini, Ebony, etc.
 - The more common trees that are found here are the jackfruit, betel nut palm, jamun, mango, and hollock.

- **Semi Evergreen Forests:**
 - **Region:** Found in the less rainy parts of the regions where moist evergreen forests are found; **Western Ghats, Andaman and Nicobar Islands, and the Eastern Himalayas.**
 - **Trees:** Such forests have a mixture of moist evergreen and moist deciduous trees.
 - The under growing climbers provide an evergreen character to these forests.
 - Main species are white cedar, hollock and kail.
- **Dry evergreen:**
 - **Region:** Found in the **Shivalik Hills and foothills of the Himalayas** up to a height of 1000 metres in the north.
Found along Andhra Pradesh and Karnataka coast in the south.
 - **Climatic Conditions:** Usually have a prolonged hot and dry season and a cold winter.
 - **Trees:** Have mainly hard-leaved evergreen trees with fragrant flowers, along with a few deciduous trees.
 - Trees have a varnished look.
 - Some of the more common ones are the pomegranate, olive, and oleander.

Tropical Deciduous Forests (Monsoon Forests)

- **Moist Deciduous Forests:**
 - **Region:** These forests are found in the **north-eastern states** along the **foothills of Himalayas, eastern slopes of the Western Ghats and Odisha.**
 - **Rainfall:** Found in the regions which record **rainfall between 100-200 cm.**
 - **Trees:** Tall trees with broad, branched trunks.
 - Some of the taller trees shed their leaves in the dry season.
 - **Teak, sal, shisham, hurra, mahua, amla, semul, kusum, and sandalwood** etc. are the main species of these forests.
- **Dry Deciduous Forests:**
 - **Region:** Found throughout the northern part of the country except in the north-east.
Also found in Madhya Pradesh, Gujarat, Andhra Pradesh, Karnataka, and Tamil Nadu.
 - **Rainfall:** Covers vast areas of the country, where rainfall ranges between 70 -100 cm.
On the wetter margins, it has a transition to the moist deciduous, while on the drier margins to thorn forests.
 - **Trees:** As the dry season begins, the trees shed their leaves completely and the forest appears like a vast grassland with naked trees all around.
Tendu, palas, amaltas, bel, khair, axlewood, etc. are the common trees of these forests.

Thorn Forests

- **Rainfall:** The forests occur in the areas that receive **annual rainfall less than 50cm.**
- **Regions:** This type is found in areas with black soil: North, West, Central, and South India.
 - Includes semi-arid areas of south west Punjab, Haryana, Rajasthan, Gujarat, Madhya Pradesh and Uttar Pradesh.
- **Trees:** The trees do not grow beyond 10 metres and consist of a variety of grasses and shrubs. Spurge, caper, and cactus are typically found in this region.
 - The plants remain leafless for most part of the year.
 - Babul, Acacia, Kokko, Khair, Khajuri, Ber, Neem, Khejri, Palas, etc. are common species of the forests.

Montane Forests

- **Montane Wet Temperate Forests:**
 - **Region:** Occur in the northern and southern India.
 - In the North, it is found in the region to the **east of Nepal into Arunachal Pradesh**, at a height of 1800–3000 metres, receiving a **minimum rainfall of 200 cm.**
 - In the South, it is found in parts of the **Nilgiri Hills, the higher reaches of Kerala.**
 - **Trees:** The forests in the northern region are denser than in the South.
 - This is because over time the original trees have been replaced by fast-growing varieties such as the eucalyptus.
 - Rhododendrons, Champa and a variety of ground flora can be found here.
- **Montane Subtropical Forests:**
 - **Climatic Conditions:** Found in the region where **average rainfall is 100-200 cm** and temperature varies between 15°C to 22°C.
 - **Region:** Found in **north-western Himalayas** (except Ladakh and Kashmir), Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh.
 - **Trees:** Chir (Pine) is the main tree but Oak, Jamun and Rhododendron are also found in these forests.

- **Himalayan Forests:**
 - **Himalayan Moist Forests:**
 - **Region:** Found in Jammu & Kashmir, Himachal Pradesh, Uttarakhand and northern hilly parts of Bengal.
 - **Elevation:** Found in the belt where altitude varies between 1000-2000 m.
 - **Trees:** Oak, chestnut, chir, sal, shrubs and nutritious grasses.
 - **Himalayan Dry Temperate:**
 - **Region:** J&K, Chamba, Lahaul & Kinnaur districts (Himachal Pradesh) and Sikkim.
 - **Trees:** Mainly coniferous; deodar, oak, chilgoza, maple, olive, mulberry and willow.
- **Alpine and Subalpine Forests:**
 - **Elevation:** In the higher reaches, there is a transition to Alpine forests and pastures occurring at altitudes of 2,500-4,000 m.
Sub alpine forests extend from Kashmir to Arunachal Pradesh between 2900 to 3500 metres.
 - **Trees:** In the Western Himalayas, the vegetation consists mainly of juniper, rhododendron, willow, and black currant.
In the eastern parts, red fir, black juniper, birch, and larch are the common trees.

Littoral/Swamp Forests

- **Region:** Found along the Andaman and Nicobar Islands and the delta area of the Ganga and the Brahmaputra.
Other areas of significance are the Mahanadi, the Godavari and the Krishna deltas.
- **Trees:** Some of these forests are dense and impenetrable. Only a limited number of plants are found in these evergreen forests.
 - They have roots that consist of soft tissue so that the plant can breathe in the water.
 - It consists mainly of whistling pines, mangrove dates, palms, and bulletwood.
- **Mangroves in India:** In India, the mangrove forests spread over 6,740 sq. km which is 7% of the world's mangrove forests.
 - The forests stabilise the shoreline and protect the coastal areas from erosion.
 - **Sunderbans along the Ganges delta is the largest tidal forest in the world.**

