

# NATURAL VEGETATION AND WILDLIFE

## Introduction

- India is a mega biodiversity country
- About 47,000 plant species in India
- 15,000 flowering plants (6% of the world total)
- Rich in non-flowering plants and animal species
- Natural vegetation grows without human help
- Virgin vegetation = undisturbed natural vegetation
- Crops and orchards are not natural vegetation
- **Natural vegetation** refers to plant life that grows naturally without human aid and remains undisturbed for a long time. It is also called **virgin vegetation**. Crops and orchards are not natural vegetation because they are cultivated by humans.
- The plants found in a particular region or time period are called **flora**.
- The animals found in a particular region or time period are called **fauna**.

## Q1. Why is India called a mega biodiversity country?

### Answer:

India is called a mega biodiversity country because it has a very large variety of plants and animals. It has about 47,000 plant species and nearly 90,000 animal species.

## Q2. What is natural vegetation?

### Answer:

Natural vegetation refers to plants that grow naturally without human help and remain undisturbed for a long period of time.

## Q3. What is virgin vegetation?

### Answer:

Virgin vegetation is natural vegetation that has grown without human interference and has not been disturbed by humans.

## Q4. Are crops and orchards part of natural vegetation? Give reason.

### Answer:

No, crops and orchards are not part of natural vegetation because they are grown by humans.

## ❖ TYPES OF VEGETATION

The following major types of vegetation may be identified in our country (Figure 5.4).

- (i) Tropical Evergreen Forests
- (ii) Tropical Deciduous Forests
- (iii) Tropical Thorn Forests and Scrubs
- (iv) Montane Forests
- (iv) Mangrove Forests



## ❖ Tropical Evergreen Forests

- Found in **high rainfall areas** of India.
- Major regions: **Western Ghats, Andaman and Nicobar Islands, Lakshadweep Islands, upper Assam, and Tamil Nadu coast.**
- These forests grow best in areas receiving **more than 200 cm of rainfall.**
- Climate is **warm and wet throughout the year.**
- Trees grow **very tall**, up to **60 metres or more.**
- Forests have **thick and dense vegetation** with trees, shrubs, and climbers.
- They have a **multilayered structure.**
- Trees **do not shed leaves at the same time**, so forests stay **green all year.**
- Important trees: **Ebony, Mahogany, Rosewood, Rubber, Cinchona.**
- Common animals: **Elephant, Monkey, Lemur, Deer.**
- **One-horned rhinoceros** is found in Assam and West Bengal.
- Many **birds, bats, sloths, scorpions, and snails** are also found

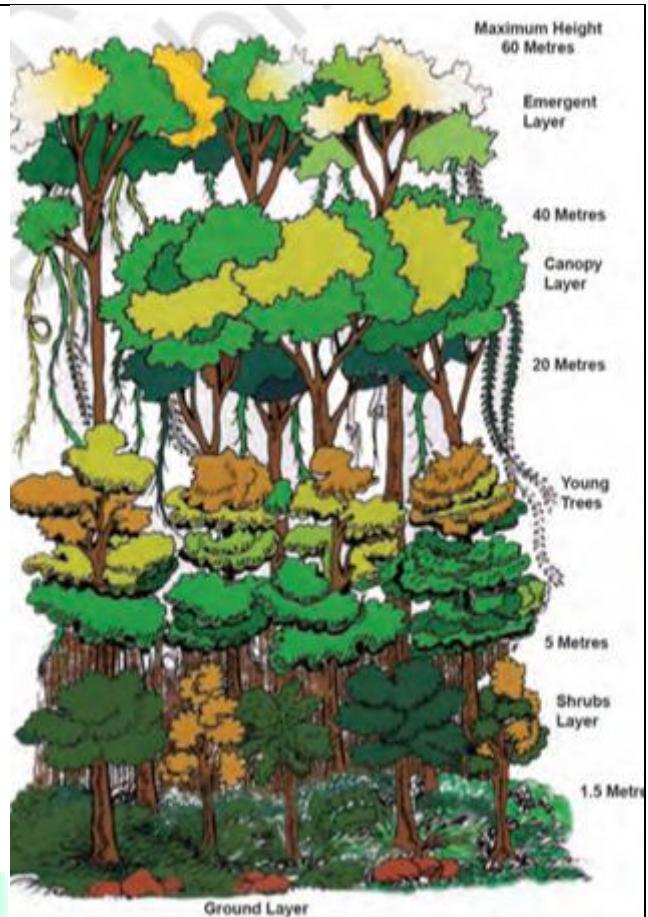


Figure 5.1 : Tropical Evergreen Forest

## ❖ Tropical Deciduous Forests

- These are the **most widespread forests** in India.
- Also known as **monsoon forests.**
- Found in areas receiving **70 cm to 200 cm of rainfall.**
- Trees **shed their leaves in summer** for about **6–8 weeks** to save water.
- **Types of Tropical Deciduous Forests**
- **1. Moist Deciduous Forests**
- Found in areas with **100 cm to 200 cm rainfall.**
- Mainly found in **northeastern states, foothills of the Himalayas, Jharkhand, Odisha, Chhattisgarh, and eastern slopes of the Western Ghats.**
- **Teak** is the most important tree.
- Other trees: **Sal, Bamboo, Shisham, Sandalwood, Khair, Kusum, Arjun, Mulberry.**
- **2. Dry Deciduous Forests**
- Found in areas with **70 cm to 100 cm rainfall.**
- Located in the **Peninsular Plateau** and the plains of **Bihar and Uttar Pradesh.**
- Forests are **less dense** with open areas.

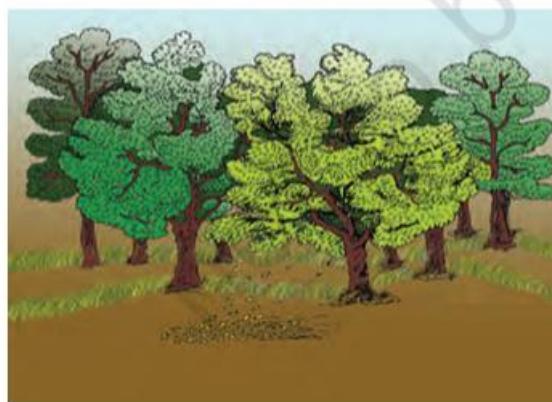


Figure 5.2 : Tropical Deciduous Forest

- Large areas have been **cleared for farming and grazing.**
- **Wildlife**
- Common animals: **Lion, Tiger, Pig, Deer, Elephant.**
- Many **birds, lizards, snakes, and tortoises** are also found.
- Trees include **Teak, Sal, Peepal, and Neem.**

### ❖ **Thorn Forests and Scrubs**

- Found in areas with less than 70 cm of rainfall.
- Vegetation consists of thorny trees and bushes.
- Mainly found in north-western India.
- Regions include Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, Uttar Pradesh, and Haryana.
- Important plants: Acacia, Palm, Euphorbia, Cactus.
- Trees are scattered and not dense.
- Trees have long roots to reach deep underground water.
- Stems are thick and fleshy (succulent) to store water.
- Leaves are small and thick to reduce water loss.
- In very dry areas, vegetation changes into thorn forests and scrubs.

#### Wildlife

- Common animals: Rat, Mouse, Rabbit, Fox, Wolf.
- Also found: Tiger, Lion, Wild Ass, Horse, Camel.

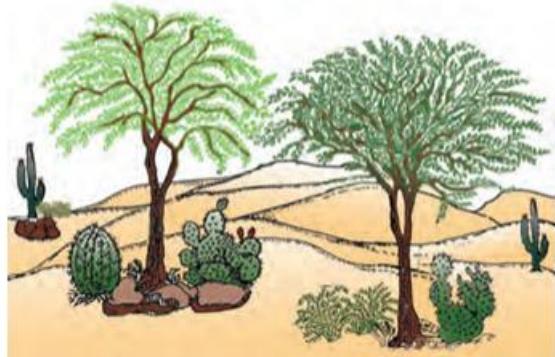


Figure 5.3 : Thorn Forests and Scrubs



Figure 5.5 : Montane Forests

### **Montane Forests**

Found in **mountainous areas**.

- As **altitude increases**, temperature decreases, causing different **vegetation zones**.
- **Vegetation changes** from tropical to alpine and tundra as we go higher.

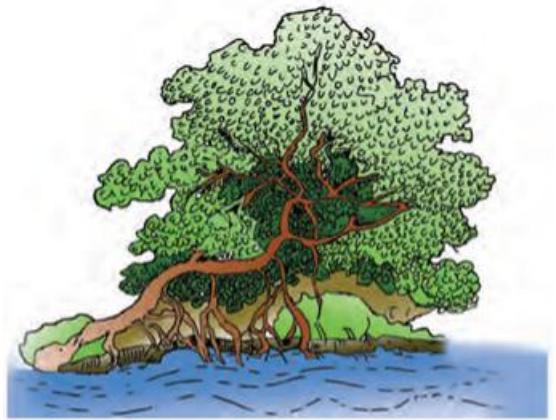
#### Types of Montane Vegetation

1. **Wet Temperate Forests (1000–2000 m)**
  - Evergreen **broad-leaved trees** like **Oaks** and **Chestnuts**.
2. **Temperate Forests (1500–3000 m)**
  - **Coniferous trees** like **Pine**, **Deodar**, **Silver Fir**, **Spruce**, **Cedar**.
  - Found mostly on **southern slopes of the Himalayas** and **high-altitude regions in southern & northeastern India**.

### **Mangrove Forests**

Found in **coastal and delta regions**, where **roots of plants are submerged in water**.

- Major deltas with mangroves: **Ganga**, **Mahanadi**, **Krishna**, **Godavari**, **Kaveri**.
- In the **Ganga-Brahmaputra delta**, **Sundari trees** grow, providing **hard and durable timber**.
- Other important plants: **Palm**, **Coconut**, **Keora**, **Agar**.
- **Wildlife**
- Famous animal: **Royal Bengal Tiger**.
- Other animals: **Turtles**, **Crocodiles**, **Gharials**, **Snakes**.
- □ **Elephants** – Majestic mammals found in **hot, wet forests of Assam, Karnataka, and Kerala**.
- □ **One-horned Rhinoceros** – Lives in **swampy and marshy lands of Assam and West Bengal**.

<p>3. <b>Temperate Grasslands (Above 3000 m)</b></p> <ul style="list-style-type: none"> <li>Forests thin out, giving way to <b>grasslands</b>.</li> </ul> <p>4. <b>Alpine Vegetation (Above 3600 m)</b></p> <ul style="list-style-type: none"> <li>Trees like <b>Silver Fir, Junipers, Pines, Birches</b>, but <b>stunted near snowline</b>.</li> <li>Shrubs and scrubs gradually merge into <b>Alpine grasslands</b>.</li> <li>Used for <b>grazing</b> by nomadic tribes like <b>Gujjars</b> and <b>Bakarwals</b>.</li> </ul> <p>5. <b>Tundra Vegetation (Highest altitudes)</b></p> <ul style="list-style-type: none"> <li>Mosses and <b>lichens</b> dominate.</li> </ul> <p><b>Wildlife</b></p> <ul style="list-style-type: none"> <li>Common animals: <b>Kashmir Stag, Spotted Deer, Wild Sheep, Jack Rabbit, Tibetan Antelope, Yak, Snow Leopard, Squirrel, Ibex, Bear, Red Panda, Sheep and Goats with thick hair</b>.</li> </ul>	<ul style="list-style-type: none"> <li>□ <b>Wild Ass</b> – Found in the <b>Rann of Kachchh</b> (arid areas).</li> <li>□ <b>Camels</b> – Found in the <b>Thar Desert</b>.</li> <li>□ <b>Indian Bison (Gaur), Nilgai (Blue Bull), Chousingha (Four-horned Antelope), Gazelle, Deer</b> – Found in different parts of India.</li> <li>□ <b>Monkeys</b> – Several species found across India.</li> </ul>  <p>Figure 5.6 : Mangrove Forests</p>
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## India's Fauna

- India has about **90,000 animal species**.
- Birds:** ~2,000 species (**13% of the world's total**).
- Fish:** 2,546 species (**~12% of the world's total**).
- India shares **5–8% of the world's amphibians, reptiles, and mammals**.

## Important Animals and Their Habitats

- Elephants:** Hot, wet forests of **Assam, Karnataka, Kerala**.
- One-horned Rhinoceros:** Swampy/marshy lands of **Assam, West Bengal**.
- Wild Ass:** **Rann of Kachchh**.
- Camels:** **Thar Desert**.
- Other mammals: **Indian Bison, Nilgai, Chousingha, Gazelle, Deer, Monkeys**.

## Big Cats

- Tigers:** Forests of **Madhya Pradesh, Sundarbans (West Bengal), Himalayan region**.
- Lions:** **Gir Forest (Gujarat)** – only natural habitat of Asiatic lions.
- Leopards:** Found in various forests; important predators.

## Himalayan Animals

- High-altitude species:** Yak, Shaggy horned wild ox, Tibetan Antelope, Bharal (Blue Sheep), Kiang, Wild Sheep, Ibex, Snow Leopard, Red Panda.

## Aquatic Animals

- Rivers, lakes, coastal areas:** Turtles, Crocodiles, Gharials.

## Birds

- Examples:** Peacocks, Pheasants, Ducks, Parakeets, Cranes, Pigeons.

### ❖ **Importance of Wildlife and Ecosystem**

- Animals and plants provide:
  - Food (milk, meat, eggs, fish)
  - Draught power & transportation
  - Medicinal plants and edible crops
  - Pollination by insects (essential for crops)
- Every species plays a role in the ecosystem.**

### ❖ **Conservation and Threats**

- **Threats to wildlife:**
  - Excessive hunting for commercial purposes
  - Pollution (chemical and industrial)
  - Acid rain deposits
  - Introduction of alien species
  - Deforestation for agriculture and habitation
- **Consequences:**
  - About **1,300 plant species endangered**, 20 extinct
  - Many animal species endangered or extinct
- **Government measures:**
  - **Wildlife Protection Act (1972)**
  - Establishment of **wildlife reserves and national parks**

❖ **Steps Taken by the Government to Protect Flora and Fauna**

1. **Biosphere Reserves**
  - **18 biosphere reserves** have been set up to protect plants and animals.
  - **12 of them** are part of the **world network of biosphere reserves**:
    - Sundarbans, Nanda Devi, Gulf of Mannar, Nilgiri, Nokrek, Great Nicobar, Simlipal, Pachmarhi, Achanakmar-Amarkantak, Agasthyamalai, Kangchendzonga, Panna
2. **Protection of Migratory Birds**
  - Wetlands like **Rann of Kachchh** attract migratory birds in winter, e.g., **Siberian Crane and Flamingos**.
  - Flamingos build nests and raise their young in these wetlands.
3. **Botanical Gardens Support**
  - Since **1992**, the government provides **financial and technical help** to botanical gardens.
4. **Special Wildlife Projects**
  - **Project Tiger** – protects tigers
  - **Project Rhino** – protects rhinoceroses
  - **Project Great Indian Bustard** – protects the bustard bird
  - **Other eco-development projects** also exist to conserve wildlife
5. **National Parks, Wildlife Sanctuaries, and Zoological Gardens**
  - **106 National Parks, 573 Wildlife Sanctuaries, and Zoological Gardens** established for protection
6. **Public Awareness**
  - Importance of **natural ecosystem** must be realized
  - **Indiscriminate destruction** of environment should be stopped for survival

### 1. Choose the correct answer

(i) To which one of the following types of vegetation does rubber belong to?  
 Ans: (a) Tundra (b) Tidal (c) Himalayan (d) Tropical Evergreen  
 (d) **Tropical Evergreen**

(ii) Cinchona trees are found in the areas of rainfall more than  
 (a) 100 cm (b) 50 cm  
 (c) 70 cm (d) less than 50 cm

Ans- (a) **100 cm**

(iii) In which of the following state is the Simlipal bio-reserve located?  
 (a) Punjab (b) Delhi (c) Odisha (d) West Bengal

Ans- (c) **Odisha**

(iv) Which one of the following bio-reserves of India is not included in the world network of bioreserve?  
 (a) Manas (b) Nilgiri (c) Gulf of Mannar (d) Panna

Ans- (a) **Manas**

### 2. Answer the following briefly

(i) What is a bio-reserve? Give two examples.

- **Answer:** A bio-reserve is an area set aside to protect **plants, animals, and their habitats**.
- **Examples:** Sundarbans, Nilgiri

**(ii) Name two animals having habitat in tropical and montane type of vegetation.**

- **Tropical:** Elephant, One-horned Rhinoceros
- **Montane:** Snow Leopard, Yak

### 3. Distinguish between

#### (i) Flora and Fauna

##### **Flora**

Plants of a region or period

Example: Teak, Sal

##### **Fauna**

Animals of a region or period

Example: Tiger, Elephant

#### (ii) Tropical Evergreen and Deciduous Forests

##### **Tropical Evergreen Forests**

Found in high rainfall areas (>200 cm)

Trees **do not shed leaves** at one time

Dense, multilayered vegetation

Examples of trees: Ebony, Mahogany

##### **Tropical Deciduous Forests**

Found in areas with 70–200 cm rainfall

Trees **shed leaves** in dry season (6–8 weeks)

Less dense, open stretches

Examples of trees: Teak, Sal

### 4. Name different types of vegetation found in India and describe the vegetation of high altitudes

#### **Types of Vegetation in India:**

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

#### **High Altitude Vegetation (Montane and Alpine):**

- **Wet temperate forests (1000–2000 m):** Oaks, Chestnuts
- **Temperate forests (1500–3000 m):** Pine, Deodar, Silver Fir, Spruce, Cedar
- **Alpine vegetation (>3600 m):** Silver Fir, Junipers, Birches, stunted trees, shrubs, grasslands
- **Tundra vegetation:** Mosses and lichens

### 5. Why are quite a few species of plants and animals endangered in India?

- Excessive hunting and poaching for commercial purposes
- Deforestation for cultivation and habitation
- Pollution (chemical and industrial)
- Introduction of alien species
- Habitat destruction leading to imbalance in the ecosystem

### 6. Why has India a rich heritage of flora and fauna?

- India has **varied climate and physical features** – tropical, temperate, desert, alpine
- It has **rich rainfall patterns and diverse soils**
- Many **forests, wetlands, mountains, and coastal areas** provide habitats for plants and animals
- India is one of the **12 mega biodiversity countries** in the world