

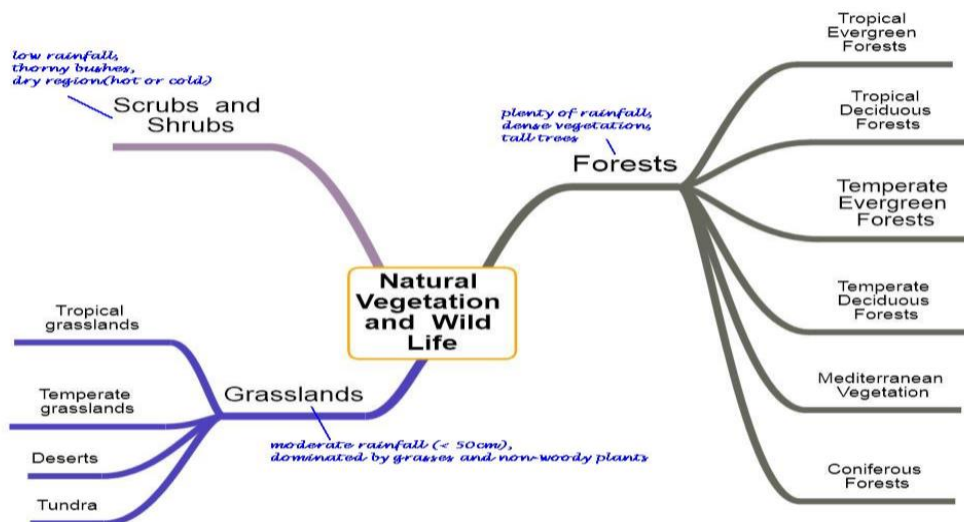
## SOCIAL STUDIES (GEOGRAPHY)

### CHAPTER 05: NATURAL VEGETATION AND WILD LIFE

(Notes)

#### OVERVIEW

- Our country India is one of the twelve mega bio-diversity countries of the world. With about 47,000 plant species India occupies 10<sup>th</sup> place in the world and 4<sup>th</sup> in Asia in plant diversity.
- There are about 15,000 flowering plants in India which account for 6% in the world's total number of flowering plants.
- India also has approximately 90,000 species of animals as well as a rich variety of fish in its fresh and marine waters.
- **Natural vegetation** refers to a plant community which has grown naturally without human aid and has been left undisturbed by humans for a long time. This is termed as a **virgin vegetation**. So, cultivated crop, fruits and orchards do not come under Natural Vegetation.
- Endemic species- Purely Indian; Exotic Species – Come outside from India.
- The term **flora** is used to denote plants of a particular region or period.
- The species of animals are referred to as **fauna**.



This huge diversity in flora and fauna kingdom is due to the following factors:

#### RELIEF

- Land** - The nature of land influences the type of vegetation. The fertile level is generally devoted to agriculture. The undulating and rough terrains are areas where grassland and woodlands develop and give shelter to a variety of wild life.
- Soil** - The sandy soils of the desert support cactus and thorny bushes while wet, marshy, deltaic soils support mangroves and deltaic vegetation. The hill slopes with some depth of soil have conical trees.

#### CLIMATE

- Temperature** - The character and extent of vegetation are mainly determined by temperature along with humidity in the air, precipitation and soil. On the slopes of the Himalayas and the hills of the Peninsula above the height of 915 meters, the fall in the temperature affects the types of vegetation and its growth.

- b) **Photoperiod (Sunlight)** - The variation in duration of sunlight at different places is due to differences in latitude, altitude, season and duration of the day. Due to longer duration of sunlight, trees grow faster in summer.
- c) **Precipitation** - In India almost, the entire rainfall is brought in by the advancing southwest monsoon (June to September) and retreating northeast monsoons. Areas of heavy rainfall have more dense vegetation as compared to other areas of less rainfall.

### Importance of Forest

- Forests are renewable resources and enhance the quality of the environment.
- They modify local climate, control soil erosion and regulate stream flow.
- They support a variety of industries, provide a livelihood for many communities.
- It controls wind force and temperature and causes rainfall.
- It provides humus to the soil and shelter to wildlife.

### The factors that cause the decline of forests

- The growing demand for cultivated land.
- Development of industries
- Mining
- Urbanization
- Gazing of pastures

## ECOSYSTEM

All the plants and animals in an area are interdependent and interrelated to each other in their physical environment, forming an ecosystem. Human beings are also an integral part of the ecosystem.

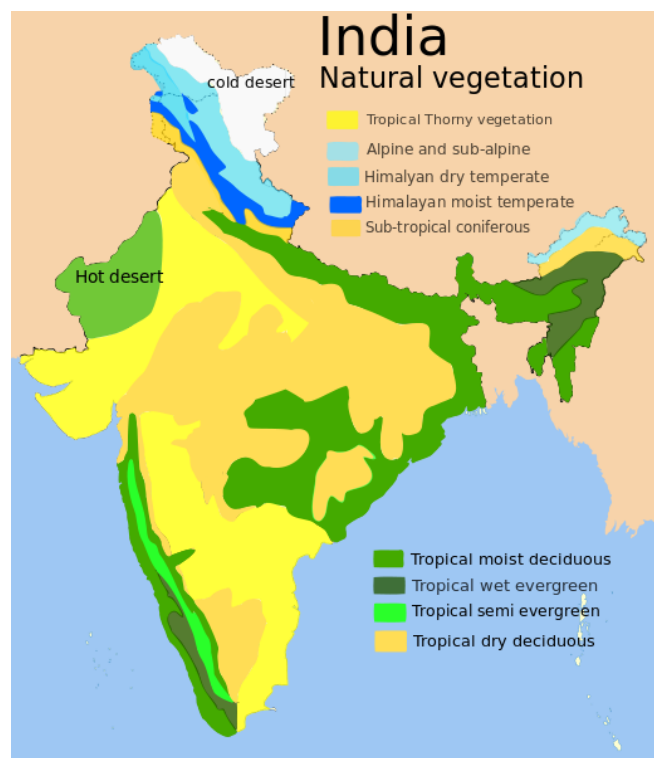
### Types of Vegetation:

The following major types of vegetation may be identified in our country.

- (i) Tropical Evergreen Forests (heavy rainfall areas)
- (ii) Tropical Deciduous Forests (Rainfall b/w 200-70)
- (iii) Tropical thorn forests and shrubs (less than 70 cm)
- (iv) Montane Forests (Higher and decrease temperature areas)
- (v) Mangrove Forests (Coastal Reign)

#### (i) Tropical Evergreen Forests

- **Rainfall** - These forests are restricted to heavy rainfall areas of the Western Ghats and the island groups of Lakshadweep, Andaman and Nicobar, upper parts of Assam and Tamil Nadu coast. They are at their best in areas having more than 200 cm of rainfall with a short dry season.
- **Height** - The trees reach great heights up to 60 meters or even above.
- **Kind of Vegetation** - Trees, shrubs, and creepers.
- There is no definite time for trees to shed their leaves. As such, these forests appear green all the year round.



- Important Trees - ebony, mahogany, rosewood, rubber and cinchona.
- Animals (found in this area) - elephants, monkey, lemur, deer, one horned rhinoceros (found in the jungles of Assam and West Bengal). Besides these animals plenty of birds, bats, sloth, scorpions and snails are also found in these jungles.

**(ii) Tropical Deciduous Forests (Monsoon Forests)**

- Rainfall - They are spread over the region receiving rainfall between 200 cm and 70 cm.
- Trees of this forest-type shed their leaves for about 6-8 weeks in dry summer.

Based on the availability of water, these forests are further divided into moist and dry deciduous.

**a) Moist deciduous forests**

- Found in areas receiving rainfall between 200 and 100 cm.
- These forests exist, therefore, mostly in the eastern part of the country – northeastern states, along the foothills of the Himalayas, Jharkhand, West Orissa and Chhattisgarh, and on the eastern slopes of the Western Ghats.
- Teak is the most dominant species of this forest. Bamboos, sal, shisham, sandalwood, khair, kusum, arjun, mulberry are other commercially important species.



Figure 1 - Tropical moist deciduous forest and swamp in Tholpetty wildlife sanctuary, Wayanad, Kerala

**b) Dry deciduous forests**

- Found in areas having rainfall between 100 cm and 70 cm.
- These forests are found in the rainier parts of the peninsular plateau and the plains of Bihar and Uttar Pradesh.
- There are open stretches in which Teak, Sal, Peepal, Neem grow. A large part of this region has been cleared for cultivation and some parts are used for grazing.
- The common animals found are lion, tiger, pig, deer and elephant. A huge variety of birds, lizards, snakes, and tortoises are also found here.

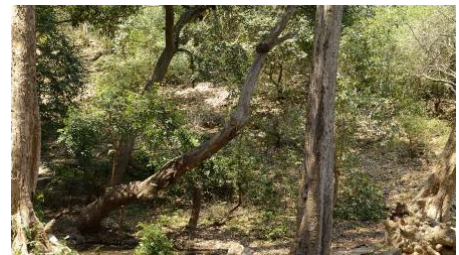
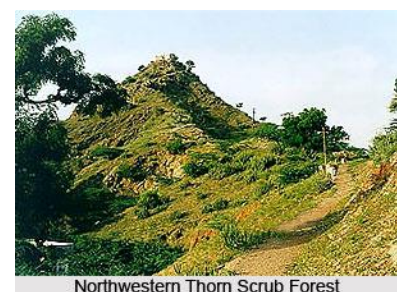


Figure 2 - Nallamalla forests at Srisailem (Dry Deciduous Forest)

**(iii) Tropical Thorn Forests and Scrubs**

- Rainfall - In regions with less than 70 cm of rainfall, the natural vegetation consists of thorny trees and bushes. This type of vegetation is found in the north-western part of the country including semi-arid areas of Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, Uttar Pradesh and Haryana. These forests give way to thorn forests and scrubs in arid areas.
- Important Plants - Acacias, palms, euphorbias and cacti are the main plant species.
- Trees are scattered and have long roots penetrating deep into the soil to get moisture. The stems are succulent to conserve water. Leaves are mostly thick and small to minimize evaporation.
- Animals (found in these region) - rats, mice, rabbits, fox, wolf, tiger, lion, wild ass, horses and camels.



**(iv) Montane Forests**

- In mountainous areas, the decrease in temperature affects the growth of vegetation.



- Wet Temperate Forests - They are found between a height of 1000 and 2000m. Example - Oaks, chestnut.
- Temperate Forests - They are found at the height of 1500-3000m. Example - pine, silver fir.
- Temperate Grasslands - They are found in the higher elevation (height).
- Alpine Vegetation - Found at the height of more than 3600 m. Example - Jumpers, pine.
- The trees get (stunted) at the snow line.
- Alpine grasslands are used by nomadic tribes like Gujjars and Bakarwals.
- Tundra Vegetation - Lichens mosses are found at the higher altitude.



Figure 3 - Knysna-Amatole Montane Forest, South Africa

**(v) Mangrove Forests**

- They are found in the coastal areas influenced by tides(winds). Mud and silt get accumulated on such coasts.
- Roots of the plant are submerged under water.
- The deltas of the Ganga, the Mahanadi, the Krishna, the Godavari and the Kaveri are covered by such vegetation.
- Sundari trees are found in the Ganga-Brahmaputra delta, which provides durable hard timber.
- Palm, coconut, keora, agar, etc. are the important trees.
- Royal Bengal tiger, turtles crocodiles are animals.



Figure 4 - Pichavaram Mangroves, Tamil Nadu

## **WILD LIFE**

- India is rich in wildlife.
- There are 90,000 animal species, 2000 species of birds and 2546 species of fish.
- India also shares b/w 5 and 8 percent of worlds, amphibians, reptiles, and mammals.
- Elephants are found in the forests of Assam, Karnataka etc.
- One horned rhinoceros, Indian Bison, Nilgri etc. are important animals.
- India is the only country that has both tigers and lions.
- Lions-Gir forests in Gujarat.
- In the rivers and lakes turtles, crocodiles and gharials are found.
- Peacocks, ducks, cranes, pigeons etc are the colorful birds.



**Importance of conservation of Wild life**

- The animals provide us drought power, transportation, meats, and eggs.
- The fish provide nutritive food.
- Insects help in pollination of crops.
- Every species has a role to play in the ecosystem.

**How are human beings responsible for balancing the ecosystem?**

- Hunting by greedy hunters.

- Pollution due to chemical and industrial waste.
- Acid deposits.
- Reckless cutting of the forests.

**What are the steps taken by the Government to protect flora and fauna?**

- 14 biosphere reserves have been set up in the country to protect flora and fauna. 4 out of these, the Sunderbans in the West Bengal, Nanda Devi in Uttarakhand, the Gulf of Munnar in Tamil Nadu and the Nilgiris (Kerala, Karnataka and Tamil Nadu) have been included in the world network of Biosphere reserves.
- Financial and technical assistance is provided to many botanical gardens since 1992.
- Project Tiger, Project Rhino, Project Great Indian Bustard and many other Eco-developmental projects have been introduced.
- 89 National parks, 490 wildlife sanctuaries, and zoological gardens are set up.

