

* Ch-5: Natural Vegetation & Wildlife

* Notes:-

→ India is one of the 12 mega biodiversity countries of the world. They are a group of countries that have the majority of the Earth's species & therefore, considered extremely bio-diverse.

→ Being a vast country, India having 47,000 plant species (out of which 15,000 are flowering plants, i.e. 6 percent in the world), occupies 10th position worldwide & 4th in Asia. Non-flowering plants such as ferns, algae & fungi also grow here. It also has around 90,000 species of animals (including marine & water fishes) & insects.

→ Natural Vegetation:

* Natural or virgin vegetation means the plant community which has grown naturally without any human intervention for a long time. That natural vegetation which are left undisturbed

over a long period of time are called virgin vegetation.

Virgin vegetation are of 2 types:-

Endemic species: those plant species which originated from the country, are termed as endemic species.

Exotic species: those plant species which originated outside the country are termed as exotic species.

Factors Affecting Diversity:

Factors which influence the variety of flora & fauna include relief (land & soil), climate (temperature, photoperiod & precipitation) & the ecosystem. These are as follows:-

Relief: it includes land & soil.

Land: it affects the natural vegetation both directly & indirectly. The nature of the land i.e. whether it is plain, hilly or a plateau, determines the kind of vegetation which will grow in it. Fertile lands are used for growing crops, vegetables & fruits. Undulating

(wavy) & rough surfaces generally develop either into grasslands or woodlands (forests). Different types of land accordingly sustain & provide shelter to different kinds of wildlife.

• Soil: the soils also vary place to place. Different kinds of soils provide different kinds of vegetation. For example, alluvial or deltaic soil of a river delta near the sea will sustain mangrove forests while slopes of hills have conical trees. The sandy soils of desert sustain thorny bushes.

- Note: animals & birds also inhabit locations based on relief. For example, migratory birds like the Siberian cranes & flamingos are found to nest in the wetlands of the Rann of Kachchh where the desert merges with the sea.

• Climate: it includes temperature, photoperiod & precipitation.

• Temperature: the temperature along with the humidity in the air & precipitation determine the character of vegetation & its extent. As the

climate gets colder either by increase in altitude (above 915m) or by going away from the equator. the vegetation will change from tropical to sub-tropical, temperate & then alpine. For example, on the slopes of the Himalayas & hills of the Peninsula, the fall in temperature affects the type of vegetation & its growth.

Temperature Characteristics of the Vegetation Zones

| Vegetation zones | Mean annual average temp. (in degree C) | Mean temp. in January (in degree C) | Remarks |
|------------------|---|-------------------------------------|-----------------|
| Tropical | Above 24°C | Above 18° | No frost |
| Sub-tropical | 17°C to 24°C | 10°C to 18°C | Frost is rare |
| Temperate | 7°C to 17°C | -1°C to C-10°C | Frost some snow |
| Alpine | Below 7°C | Below -1°C | Snow |

• Photoperiod (Sunlight): the amount & duration of sunlight is known as photoperiod. The difference in latitude, altitude & season brings variation in duration of sunlight in different places. In warmer regions & climates, plant growth is faster due to longer duration of sunlight, especially with availability of adequate moisture. An instance is the fact that the Southern slopes of the Himalayas are covered with thicker vegetation than the Northern slopes.

• Precipitation: advancing South - West monsoon (June to September) & retreating North - East (October - November) monsoons bring almost all the rainfall in India. Areas of heavy rainfall always have denser vegetation than other areas with lesser rainfall. The South - West monsoon rains on the windward side of the Western Ghats, thus cause a heavy growth of tropical evergreen forests there, whereas the leeward side does not have any such forests.

• Ecosystem: various species of plants occur in areas having similar climatic

conditions. To a large extent its nature determines the animal life in that area. All the plants & animals in an area are interdependent on each other in their physical environment & form an ecosystem. Thus, an ecosystem is a biological environment consisting of all the organisms living in a particular area, as well as all the non-living physical components of the environment with which the organisms interact, such as air, soil, water & sunlight.

- Biome: it is a major community of plants & animals having similar life forms existing under similar environmental conditions. A biome is identified on the basis of plant existing there. It is also termed as 'major life zone'.

- Human Influence In An Ecosystem: human beings influence ecosystem in the following manner:

- They utilise the vegetation & wildlife.

- The greed of human beings leads to over utilisation of natural resources.

- Human beings cut the trees & kill the animals creating ecological imbalance.

- Due to the activities of human beings, some of the plants & animals have reached the verge of extinction.

• Importance of Forests: forests are advantageous for the environment. They influence climate, reduce soil erosion, regulate stream flow, provide raw material for industries & livelihood for many, etc. They control wind force & temperature & cause rainfall. They also provide shelter to various animal species.

• Change in Nature of Vegetation in India: factors like growing demand for cultivated land, development of industries & mining, urbanisation have changed natural vegetation. The vegetation cover of India in large parts is no more natural in the real sense, except in some inaccessible regions like the Himalayas, the hilly region of Central India & the Marusthali. In most of the places, it is either modified, replaced or

degraded by human interference.

Types of Vegetation: relief & climatic factors develop different types of vegetation. Based on the major types of forest types, India has following types of vegetation:

1. Tropical evergreen forests
2. Tropical deciduous forests
3. Tropical thorn forests & scrubs
4. Montane forests
5. Mangrove forests

Q & A : Answers

1. Natural vegetation or virgin vegetation is vegetation which grows in the region all by itself without the interference of human activity.

2.a. Flora: flora is the plant life occurring in a particular region or time.

b. Fauna: fauna is all of the animal life of any particular region or time.

3.a. Land & soil affects the natural

vegetation directly:

i. The sandy soil of the desert supports cactus & thorny bushes.

ii. Wet, marshy, deltaic soil supports mangroves.

b. Land & soil affects the natural vegetation indirectly: nature of land influences the type of vegetation. If the land is level & fertile, it is mainly used for farming.

4. An ecosystem is a community of living organisms interacting with each other & their non-living environment.

5. Algae & fungi

6. Soil, relief, climate & drainage.

7. A very large ecosystem on land having distinct types of vegetation & animal life is called a biome.

8.i. Different types of soil: India has almost all major types of soils. It has alluvial soil which is very fertile, black soil, laterite soil, desert & mountain soil. The sandy soils of the desert

support cactus & thorny bushes while
wet, marshy & deltic soils support
mangroves & deltic vegetation.

ii. Different climatic conditions: different climatic conditions prevail in India. At some places, the temperature is at 55°C & at other, it is about 45°C . So it supports all types of plants. Some places receive a rainfall of more than 1000cm , & some receive only 50cm . This also helps in growing different type of plants.

iii. Sunlight: sunlight is one of the important factors responsible for the growth of vegetation. Due to the longer duration of sunlight, trees grow faster in most parts of India.

iv. Precipitation: precipitation also plays a vital role in the growth of different types of vegetation. Tropical rainforests are found in the Western Ghats due to heavy rainfall.

9. In the Himalayan region of our country, the vegetation differs according to the height.

- In the foothill, (the Shiwalik) are tropical deciduous forests. 'Sal' is the most important species of economic significance.
- The zone with altitude 1000m - 2000m consists of evergreen forests. Beech, chestnut, oak, ash, etc., are the main trees. These at a higher altitude are replaced by 'chir' & 'chil'.
- The zone between 1500m - 3000m includes pine, cedar, silver fir & spruce. They are the famous coniferous trees, typical of the dry temperate region found in the inner Himalayan region.
- At the height of 3600m or more, shrubs, scrubs, & grasses of alpine variety are found.