

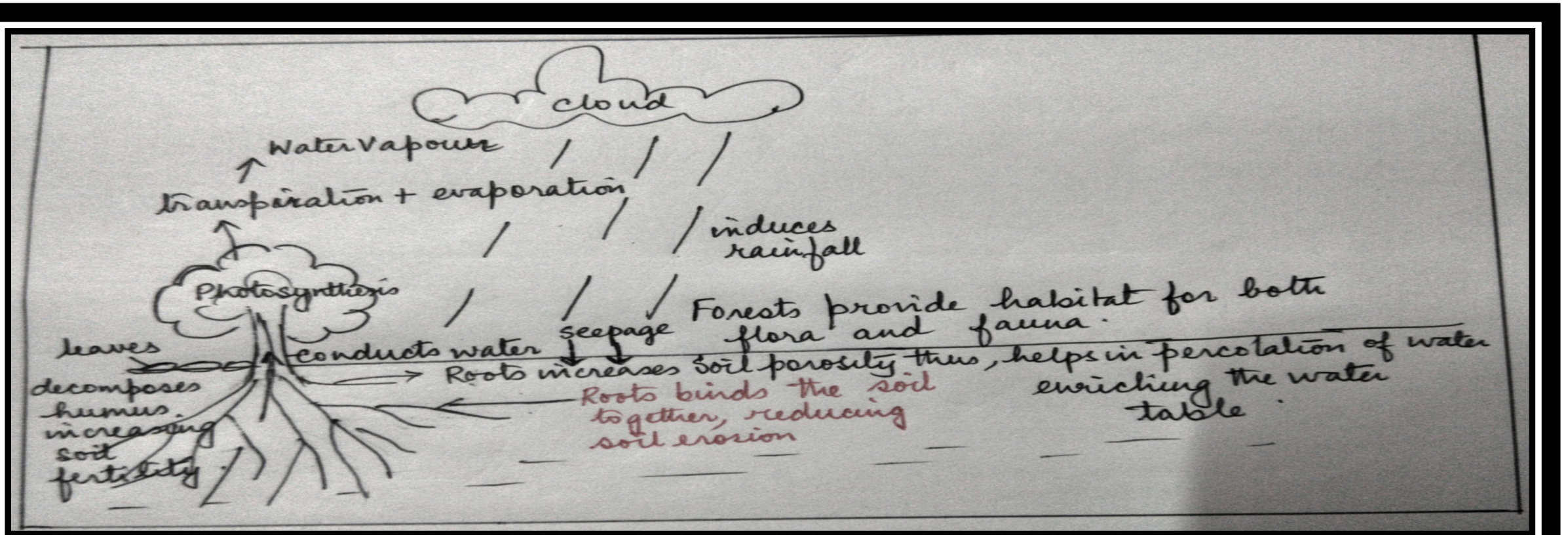
NATURAL VEGETATION OF INDIA

Natural vegetation: are trees that grow on their own depending on factors such as moisture, temperature and soil over an area.

Virgin vegetation: is the natural vegetation which has remained undisturbed by humans.

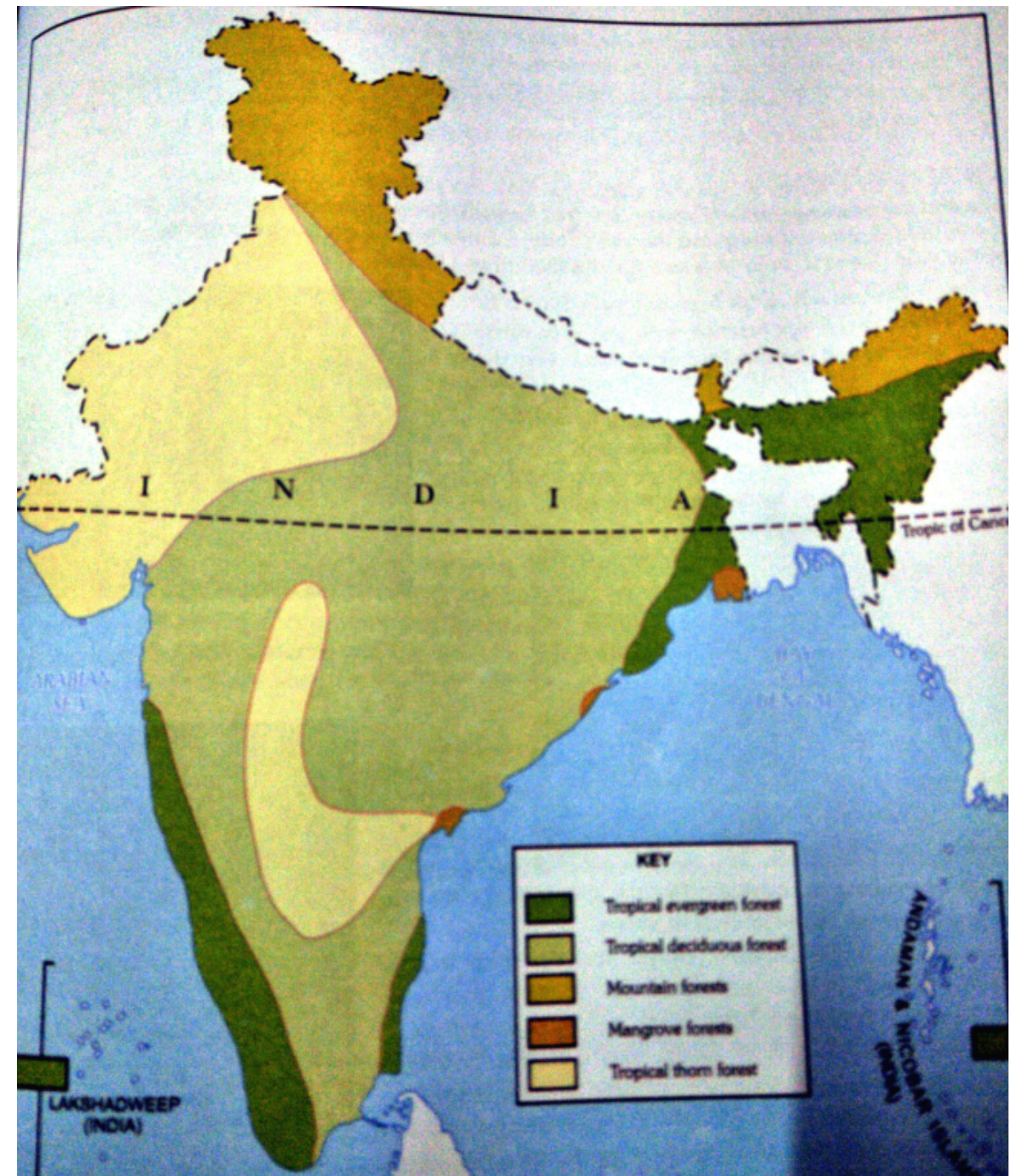
It is found in Eastern Himalayas, Purvanchal ranges and Sunderbans.

IMPORTANCE OF FORESTS: study from pdf file and text book.



TYPES OF NATURAL VEGETATION:

- TROPICAL EVERGREEN FOREST
- TROPICAL DECIDUOUS FOREST
- TROPICAL DESERT
- LITTORAL FOREST
- MOUNTAIN FOREST



TROPICAL EVERGREEN FORESTS:

CLIMATIC CONDITIONS	CHARACTERISTICS	DISTRIBUTION
<ul style="list-style-type: none">• Annual rainfall of over 200 cm.• Temperature between 24°C-27°C• Relative humidity of more than 70% with a hot , humid climate.	<ul style="list-style-type: none">• Trees are tall arranged in three storeyed layers.• Dense growth of trees competing for sunlight.• Thick canopy of leaves preventing the penetration of sunlight.• Trees are evergreen, hard-wooded.• Trees are found in mixed stand.• Forest floor is damp and swampy and forest is dark.	<ul style="list-style-type: none">• Western parts of western Ghats in Kerala, Karnataka , Maharastra.• North eastern states of Arunachal Pradesh, Tripura, Manipur, Mizoram, Nagaland, Assam.• Andaman and Nicobar islands.

IMPORTANT TREES	CHARACTERISTICS	USES
<ul style="list-style-type: none">• Rosewood• Ebony• Mahogany• Shisham• Gurjan	<p>Hard and fine- grained</p> <p>Hard, tough and durable</p> <p>Tough and durable, high decay resistance</p> <p>Hard and durable</p> <p>Hard and less durable</p>	<p>Making expensive furniture.</p> <p>Ornamental wood for guitar picks, expensive furniture</p> <p>Expensive furniture</p> <p>Furniture and construction material.</p> <p>Railway sleepers.</p>

TROPICAL MONSOON DECIDUOUS FORESTS

- They are known as deciduous forests as the trees shed their leaves during the dry period.

CLIMATIC CONDITIONS	CHARACTERISTICS	DISTRIBUTION
<ul style="list-style-type: none">• Rainfall ranging between 100 and 200 cm• Temperature ranging between 25°C- 27°C• Relative humidity between 60%-80%	<ul style="list-style-type: none">• Height between 30m to 45m.• Hard wooded .• Found in pure stand.• Less denser and penetrable.• Trees shed their leaves during dry period. <p>Therefore, these forests are commercially more exploited</p>	<ul style="list-style-type: none">• Foot hills of the Himalayas.• Eastern side of the Western Ghats in Kerala, Karnataka, Maharastra, Tamil Nadu• Chattisgarh, Odisha, Jharkhand, West Bengal.

IMPORTANT TREES	CHARACTERISTICS	• USES
<ul style="list-style-type: none">• Teak• Sal• Sandalwood• Semal• Myrobalan	<p>Hard and durable timber, termite resistant and non-corrosive to iron nails</p> <p>Hard, heavy, tough, durable and immune to attack of white ants</p> <p>Hard and strongly scented</p> <p>Soft and white timber</p> <p>Soft and not so durable</p>	<p>Furniture and railway sleepers</p> <p>Doors and window panels, railway sleepers.</p> <p>Handicraft and perfumery.</p> <p>Making toys, packing cases.</p> <p>Fruit provide material for tanning leather, dyeing cotton, wool and silk.</p>

TROPICAL DESERT

CLIMATIC CONDITIONS	CHARACTERISTICS	DISTRIBUTION
<ul style="list-style-type: none">Annual rainfall less than 25 cmTemperature 25°C – 27°C	<ul style="list-style-type: none">Trees are xerophytic in nature as they adapt themselves to the dry conditions.Long roots to penetrate deep into the soil to trap more moisture.Leaves are small or modified to thorns and spines to reduce loss of water by transpirationSucculent stems to store water.	Rajasthan Kachchh and saurashtra in Gujarat South western Punjab Rain-shadow region of Deccan plateau.

IMPORTANT TREES	USES
<ul style="list-style-type: none">BabulKikarkhair	Yields gum, bark is used for tanning hides and skin Timber is used for making furniture and for construction Dyeing cotton and fishing nets.

LITTORAL OR MANGROVE OR TIDAL FORESTS

- Mangrove forests are found in and around tropical and sub-tropical tidal creeks and river deltas, where saline water during high tide inundates the land.

CONDITIONS	CHARACTERISTICS	DISTRIBUTION
Rainfall ranging between 150-200 cm. Saline soil of deltaic region caused due to tidal creeks	They have pneumatophores or breathing roots to absorb oxygen as the soil is poor in oxygen. Stilt roots to improve the mechanical support of the tree in the shifting soil. Dense forest with tangles of creepers.	Sunderbans in West Bengal(so called due to the presence of sundari trees) in the ganga delta. Deltas of Mahanadi, Godavari, Krishna and Kaveri. Andaman and Nicobar islands.

IMPORTANT TREES	CHARACTERISTICS	USES
SUNDARI furniture	strong, durable and water resistant	making boats,

MOUNTAIN FORESTS

- The Himalayan region shows a succession of vegetation types from tropical in the foothills to alpine at greater heights, as temperature decreases with increasing altitude and variation in the amount and type of precipitation.
- Foothills – tropical monsoon deciduous forests of sal, bamboo, teak.
- Between 1000 m – 2000 m altitude – wet temperate belt of oak, birch and chestnut.
- Between 2000 m – 3000 m altitude – moist temperate belt of oak, laurel, chestnut mixed with chir pine spruce
- Between 2900 m – 3500 m – alpine forests of stunted juniper, fir, rhododendron and birch.

IMPORTANT TREES	CHARACTERISTICS	USES
Cedar	decay resistant, light weight, durable	furniture making
Deodar	immune to termite.	
furniture	hard, oily durable	railway sleepers,
Spruce	soft wooded	paper
Chir pine	moderately hard wooded	extract resin,
turpentine, tea chests		
Silver fir	soft and white wood	packing boxes, paper,
match stick		
Birch	soft wooded	furniture, cabinets

Conservation of Forests

Conservation of forests means to protect forests and their wealth from getting destroyed by applying different methods. Forest cover in India has dwindled to 19.4% of the total area because of the following reasons:

- Forests have been cleared in large areas and have been converted into agricultural land to provide food for the teeming millions.
- Intensive degradation of forests has occurred due to shifting agricultural practices.
- With overgrazing and rapid increase in population, there is an increase in demand for forest-based raw materials. This has led to exploitation of forest resources and damaged the ecosystem.
- Increasing destruction and degradation of forests have resulted in increased soil erosion, erratic rainfall, intense floods and droughts. Large-scale deforestation has increased carbon dioxide levels in the atmosphere which in turn has increased global warming and led to climate change.

The Government of India reorganised the need to upgrade and conserve forests. To promote research in forestry and forest management, the **Forest Research Institute** and the **Indian Institute of Forest Management** were established. Awareness programmes have been introduced at school and college levels and in villages for protection and conservation of forests. Policies and acts for conservation of forests have been formulated and implemented.

Measures Adopted for Conserving Forests

- **Forest policy and law:** The Government of India promulgated a new Forest Policy in 1988. The main thrust areas are **protection, conservation and development of forests**. Some of the objectives are as follows:
 - Maintenance of environmental stability through preservation and restoration of ecological balance

- Checking soil erosion and **denudation** in **catchment areas** of rivers, lakes and reservoirs
- Substantial increase in forest and tree cover through massive **afforestation** and **social forestry programmes**
- Controlling shifting cultivation practices and encroachment
- Banning all **felling** above 1000 m altitude for some years to allow these areas to recover

• **Integrated Forest Protection Scheme (IFPS):** This scheme was started in the tenth Five-Year Plan. The salient features are as follows:

- Forest fire control and management
- Protection and conservation of sacred groves
- Conservation and restoration of unique vegetation and ecosystems
- Control and eradication of forest invasive species

• **Social forestry:** The term **social forestry** was first used in India in 1976 by the National Commission on Agriculture, Government of India. India embarked on the social forestry project with the aim of taking the pressure off the existing forests by planting trees on unused and fallow land to supply firewood, small timber and minor forest produce to the rural population.

Thus, **social forestry** means the management and protection of the forest as well as **afforestation** of barren lands aimed at helping in environmental, social and rural development as against the traditional objective of securing revenue. This reduces the pressure on traditional forest areas. Through this scheme, the government has recognised the right of local communities to access the forest and encourage rural communities to manage forest resources.

Objectives

- To supply fuel wood to rural areas so that cow dung may be used as manure and not fuel for chulhas
- To increase production of fruits and add to the potential food sources of India
- To meet the recreational needs of the rural population
- To conserve soil and water and maintain ecological balance by enhancing biomass generation
- To provide employment opportunities and increase family income to alleviate poverty
- To relieve pressure on reserved forests

Advantages

- Improves soil fertility
- Facilitates the infiltration of water thus helping in the maintenance of groundwater table
- Reduces surface runoff and sedimentation in the reservoirs and rivers

• **Agro forestry:** **Agro forestry** is a component of social forestry. In agro forestry, agricultural crops along with orchard crops and livestock farming are practised on the same piece of land. This is a sustainable land use system that maintains the total yield by combining food crop together with forest tree and livestock farming using management practices that takes care of the social and cultural characteristics of the local people and the economic and ecological conditions of the local area. This enables farmers to get food, fodder, fuel, fruit and timber from land.

Review

- State the climatic condition required for mangrove vegetation.
- State the two distinct zones of montane vegetation.
- List two species of trees found each in (i) mangrove forests and (ii) montane vegetation.
- List two ways by which forests are considered important.
- Name two people's movements started to conserve forests.

ROLE OF PEOPLE:

- **People's participation**

- **Van Mahotsav:** This movement was launched in 1950 to make people **aware of the importance of planting trees**. Every year millions of saplings distributed by the Forest Department are planted during the monsoon season between 1 and 7 July. Saplings are planted in schools and colleges and alongside roads, railway tracks and areas affected by soil erosion.
- **Chipko Movement:** In 1972, Shri Sundarlal Bahuguna and Chandi Prasad Bhat started the Chipko Movement in the Garwhal region of Uttarakhand. The Chipko Movement has been successful in banning tree felling above 1,000 m altitude and a slope of more than 30°.