

# Biomes

Lesson No.	Title	Activity
15	Biomes	Write a short note on natural vegetation and animal life of your area.

## Meaning

Various components of biosphere interact as well as complement each other. Energy which reaches from sun is the prime source for various lives on the earth. But, its distribution on the surface of the earth varies because of various reasons which you have already studied in the previous chapters. Because of this reason, the biotic life varies tremendously from hot humid to cold dry. Hence, they give rise to assemblage of plants and animal life in various geographical settings.

## Meaning of Biomes

- Biome is a short form of biological home. Biome may be defined as a large natural eco-system wherein we study the total assemblage of plant and animal communities.
- Biome includes both plant and animal communities but a biome is usually identified and named on the basis of its dominant vegetation, which normally constitutes the bulk of the biomass.

## Factors affecting Biomes

- Length of day light and darkness. This is mainly responsible for duration of photosynthesis.
- Mean temperature as well as difference in temperature. Differences (both diurnal and annual) to find out extreme conditions.
- Length of growing season.
- Precipitation which includes total amount, variations over time and intensity.
- Wind flow that include speed, direction, duration and frequency.
- Soil types
- Slope
- Drainage
- Other plant and animal species.

## Classification of Biomes

### On the basis of climate with special emphasis on availability of moisture

Biomes are determined by the degree to which moisture is available to plants in a scale hanging from abundant (forest biome) to almost scarce (desert biome).

- Forest biome
- Savanna biome

- Grassland biome
- Desert biome

### On the basis of climate and vegetation

Classified on the basis of relationship between the world distributional patterns of plants and animal species and the climatic types of the world.

Biomes of the first order (Based on climatic zones)	Biomes of the Second order (Based on Vegetation)	Biomes of the Third order (Combination of climate and vegetation)	
1. Tropical Biome	(i) Tropical Forest Biome	(a) Evergreen Rain-Forest Biome	
		(b) Semi-evergreen Forest Biome	
		(c) Deciduous Forest Biome	
		(d) Semi-deciduous Forest Biome	
		(e) Monsoon Forest Biome	
		(f) Swamp Forest Biome	
(ii) Savanna Biome	(iii) Desert Biome	(a) Savanna Forest Biome	
		(b) Savanna Grassland Biome	
2. Temperate Biome	(i) Boreal Forest Biome (Taiga Forest Biome)	(a) North American Biome	
		(b) Asiatic Biome	
		(c) Mountain Forest Biome	
	(ii) Temperate Deciduous Forest Biome	(iii) Temperate Grassland Biome	(a) North American Biome
			(b) European Biome
	(iv) The Mediterranean Biome	(v) Warm Temperate Biome	(a) Soviet Steppe Biome
			(b) North-American Prairies Biome
	(i) Arctic Tundra Biome	(ii) Alpine Tundra Biome	(c) Pampa Biome
			(i) Australian Grassland Biome
			(ii) Southern Hemisphere Biome
3. Tundra Biome	(i) Arctic Tundra Biome		
		(ii) Alpine Tundra Biome	

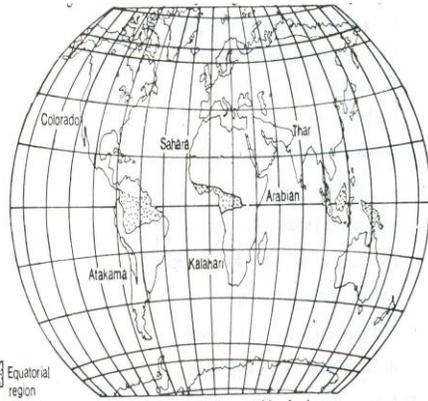
*GEOGRAPHY*

### The Evergreen Rainforest Biome Geographical Background

- Extends upto 10<sup>0</sup> latitude on both sides of the equator.
- Covers the area of Amazon low land of south America, Congo basin of equatorial Africa and South Eastern Asian Islands extending from Sumatra to New Guinea.

## Natural Vegetation and Animal Life

- The canopy or upper level where trees lies between about 20 metres to 50 metres. Most of them are hard wood trees like ebony, Mahogany, rose wood, sandalwood, cinchona, etc.
- The second level of intermediary level where trees lies between about 10 meters to 20 meters. The most important plant of this group is palm trees. Apart from palm trees, epiphytic and parasitic plants are also found in this layer.
- The third or lower level lies from surface level to about 10 meters of heights. Under this category variety of plants are found namely orchids, ferns, mosses, herbs, bananas, pineapples etc.



## Human Response

- Human being has also started to damage this biologically rich eco- system through various developmental activities.
- These activities are construction of large dams and reservoirs, roads and high ways, extraction of timber clearance for pasture or crops, encroachment and clearance by landless peasants etc.

## Temperate Grassland Biome

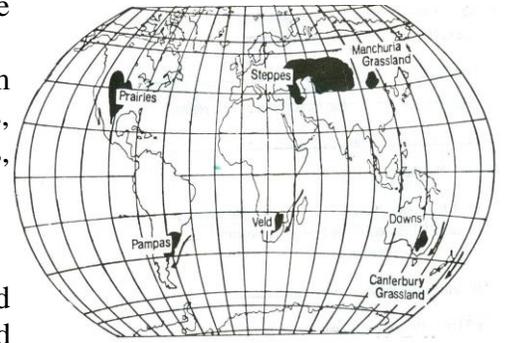
### Geographical Background

- Temperate grasslands are located in two typical locations i.e. interior of the continent in the northern hemisphere and margin of the continents in the southern hemisphere.
- In Eurasia, they are called the steppes; in North America, called as praries; known as Pampas in Argentina and Uruguay; in South Africa, called veldt and in Australia, known as Downs.

## Natural Vegetation and Animal Life

- As the precipitation is too low for the growth of trees but is sufficient for the growth of grass. The natural vegetation of these regions comprises treeless grasslands.
- Trees appear only on slopes of mountains where precipitation is more. The height of grass varies from place to place according to the amount of precipitation and fertility of the soil.

- These grasslands are natural habitat of a variety of animals. Note worthy among them are antelopes, wild asses, horses, wolves, kangaroo, emu, and dingo or wild dog



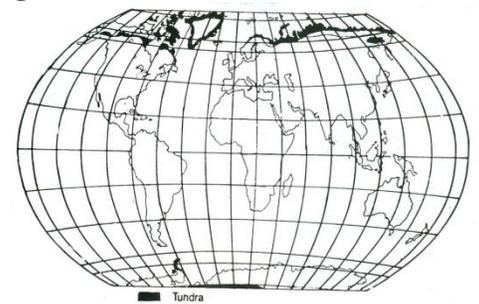
## Human Response

- No other biomes has ever undergone so many changes as the temperate grassland biomes due to the human activities.
- Majority of the grasslands have been converted into agricultural lands which have now become famous 'granaries of the world'.
- The second crucial factor responsible for alteration of this virgin grasslands is pastoralism or domesticated of animals. Today virgin grass lands are very rare sight.
- Large scale hunting of animals has resulted into phenomenal decrease of the population of some animals and disappearance and extinction of some animals.

## The Arctic Tundra Biome

### Geographical Background

- This is a cold desert in which atmospheric moisture is scarce and summers are so short and cool that trees are unable to survive.
- This biome covers parts of Alaska, northern parts of Canada, the coastal areas of Greenland and the Arctic Coastal regions of Russia and Northern Siberia.



## Natural Vegetation and Animal Life

- The plant cover consists of a considerable mixture of species.
- Many of these species are dwarf form such as grasses, mosses, lichens, flowering herbs, and a scattering of low shrubs. These plants often occur in a dense, ground hugging arrangements.
- The animal of this biome may be categorized as (i) resident and (ii) migrant.

- Resident animals like ptarmigan can adjust themselves to the changing climatic conditions.
- The migratory animals, in contrast, begin migrating to the warmer places in the very beginning of winter.

### **Human Response**

- The harsh environment supports less population.
- The tribes of Samoyeds, Lapps, Finns and Yakuts in Eurasian Tundra and Eskimos of Canada and Alaska are some of the original inhabitants of this place and lead nomadic life for centuries.
- These tribes are now leading permanent or seminomadic life.

### **Evaluate Yourself**

1. Define biome? Classify biomes on the basis of climate and vegetation.
2. Temperate biomes have exploited by human intervention. Explain.
3. Explain factors affecting biomes.