

Course: B.A Third Year  
Subject: Geography  
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Unit: II  
Topic: Types and Distribution of Flora and Fauna



## Flora and Fauna

Dear students, welcome to the Geography series, I have great pleasure in inviting your valued attention to this episode dealing with Types and Distribution flora and fauna

In this episode let me explain the, types and distribution flora and fauna on the earth. This episode consists of following modules:

- 1.1 Flora and fauna defined
- 1.2 Importance of flora and fauna
- 1.3 Types of flora and Fauna
- 1.4 Nature of flora and fauna
- 1.5 World distribution of flora and fauna

### 1.1 Flora and fauna defined

By definition, *flora* is a word of Latin origin referring to Flora, the goddess of flowers. Flora can refer to a group of plants, , as well as to bacteria. Flora is the root of the word *floral*, which means pertaining to flowers. *Fauna* can refer to the animal life or classification of animals of a certain region, time period, or environment. Fauna is also of Latin origin. In Roman Mythology Fauna was the sister of Faunus, a good spirit of the forest and plains.

The flora and fauna of any given region is usually explained in biological terms to include the genus and species of plant and animal life, their preferred growing or breeding habits, and their connection to one another in the environment as well. In addition to geographical groupings, environment also helps further classifications of flora and fauna. For example, aquatic flora and fauna of a region refers to the plant and animal life found in the waters in or surrounding a geographic region. The term *flora* is often used to cover all plants, fungi and algae in a given environment, while *fauna* refers to the animals that live there. The scientific definition of flora and fauna is the plants and animals that live in a particular area or time. The difference in flora and fauna stems from whether plants or animals are being discussed.

### 1.2 Importance of Flora and fauna

Biologists and environmentalists study flora and fauna for a number of reasons. Preservation and conservation as well as gaining new biological understandings are just a few reasons why flora and fauna are important to researchers. Several organizations, including Fauna and Flora International (FFI), work together to use their research and findings to further policy on conservation and preservation as well as biodiversity.

An indigenous species, whether plant or animal, is one that originated in an area and continues to grow and survive there without any interference by humans. The opposite of indigenous species are introduced ones.

Many believe only animals are endangered. They think wild plants can just grow back after damage. Our native plants are declining at an alarming rate. Among them are some of the most beautiful and useful species on Earth. The implications of this trend are stunning. The importance of plants to life on Earth is immeasurable. The landscape and wildlife we cherish, the food we eat, even the very air we breathe is connected to plant life.

- ❖ Plants support wildlife. For every plant species that goes extinct, up to 30 other species of plants, insects and other animals may also decline. Plants provide the food and habitat for wildlife, from birds and butterflies, to antelope and field mice!
- ❖ Plants support a healthy environment. They provide clean air, help hold soil in place, clean water, moderate wind and water impacts, and shade the earth. Plants support people.
- ❖ Plants give many gifts to man. They provide food, fiber, fuels, pharmaceuticals, ornamentals and fragrance. Many of our native plants are known to contain chemicals that can be used to treat human illnesses. Others have the ability to fight agricultural pests and improve existing crops.
- ❖ Even more economic and scientific treasures await discovery. Each species is a potential natural resource.
- ❖ The genetic diversity of plants and animals is preserved. It ensures the sustainable utilisation of life support systems on earth.
- ❖ It provides a vast knowledge of potential use to the scientific community. A reservoir of wild animals and plants is preserved, thus enabling them to be introduced, if need be, in the surrounding areas.
- ❖ Biological diversity provides immediate benefits to the society such as recreation and tourism. Biodiversity conservation serves as an insurance policy for the future.

### 1.3 Types of flora and fauna

Both flora and fauna have further classifications or subdivisions. Flora classifications depend on the region, climate, environment and period of the plants being described. The fauna subdivisions are based on mostly on where the animals live and their size.

There are many different flora regions across the planet. Some regions can be as large as entire continents or as small as a wetland or mountainous regions. Besides geographic areas, climate and time periods can group different plants into floras. Finally, plants can be grouped into native flora, agricultural and garden flora and weed flora.

#### Types of fauna

There are seven different subdivisions of fauna that are used, based on where the animals occur and their size.

- i.** Infauna and epifauna
- ii.** Micro fauna
- iii.** Meiofauna
- iv.** Macrofauna
- v.** Mesofauna
- vi.** Mega fauna

Infauna and epifauna are aquatic animals that live within or on the bottom of the ocean floor, respectively. Micro fauna are microscopic and size, while meiofauna are slightly larger and live in both salt and fresh water soil environments. Macrofauna are tiny soil organisms, larger than meiofauna, but smaller than earthworms and nematodes, which is

part of the mesofauna group. Finally, mega fauna are the large animals of the particular environment being discussed.

#### Infauna

*Infauna* are organisms that burrow and reside within the bottom most oceanic sediments.

#### Epifauna

*Epifauna*, also called *epibenthos*, are aquatic animals that live on the bottom substratum as opposed to within it, that is, the benthic fauna that live on top of the sediment surface at the seafloor.

#### Macrofauna

*Macrofauna* are soil organisms which are retained on a 0.5mm sieve. Studies in the deep sea define macrofauna as animals retained on a 0.3mm sieve to account for the small size of many of the taxa.

#### Megafauna

*Megafauna* are large animals of any particular region or time. For example, Australian megafauna.

#### Meiofauna

*Meiofauna* are small benthic invertebrates that live in both marine and fresh water environments. The term *Meiofauna* loosely defines a group of organisms by their size, larger than microfauna but smaller than macrofauna, rather than a taxonomic grouping. One environment for meiofauna is between grains of damp sand (see Mystacocarida).

#### Mesofauna

*Mesofauna* are macroscopic soil invertebrates such as arthropods, earthworms, and nematodes.

#### Microfauna

*Microfauna* are microscopic or very small animals (usually including protozoans and very small animals such as rotifers)

#### . Types of flora

Flora is basically the plant life that is present in a particular region or habitat or at a particular time and fauna is the animal life that is present in a particular region or habitat or at a particular time. The area of flora, fauna and biodiversity is quite interrelated. Flora and fauna forms a major part of biodiversity. Plants are grouped into floras based on region, period, special environment, or climate. Regions can be geographically distinct habitats like mountain vs. flatland. Floras can mean plant life of an historic era as in fossil *flora*. Lastly, floras may be subdivided by special environments:

- *Native flora*. The native and indigenous flora of an area.
- *Agricultural and garden flora*. The plants that are deliberately grown by humans.
- *Weed flora*. Traditionally this classification was applied to plants regarded as undesirable, and studied in efforts to control or eradicate them. Today the designation is less often used as a classification of plant life, since it includes three different types of plants: weedy species, invasive species (that may or may

not be weedy), and native and introduced non-weedy species that are agriculturally undesirable. Many native plants previously considered weeds have been shown to be beneficial or even necessary to various ecosystems.

#### 1.4 Nature of flora and fauna

Bacterial organisms are sometimes included in a flora, and sometimes the terms bacterial flora and plant flora are used separately. The terrestrial flora and Fauna are classified as follows:

##### I. Terrestrial Flora

Over much of the planet, terrestrial flora is the most significant visual component of the landscape. This flora is classified into

1. perennials: plants that endure seasonal climatic fluctuations from year to year
2. annuals: plants that perish during times of climatic stress (such as winter) but leave behind a reservoir of seeds to germinate during the next favorable period

In Floristic Terminology we can classify into

1. plants that reproduce through spores:
2. plants that reproduce through seeds
3. stem or trunk composition
4. leaf loss
5. leaf shape
6. wood  
hard wood: softwood:

##### II. Terrestrial Fauna

Characteristics of fauna

1. animals occur in much greater variety than plants over Earth
  - a. animals much less prominent than plants in the landscape
  - b. environmental interrelationships are much less clearly evidenced by animals
2. animals are sometimes more sensitive indicators than plants of ecosystem health, animals are motile – capable of self-generated movement and animals cannot manufacture their own food

##### A. Kinds of Animals

1. Invertebrates
  - a. animals without backbones more than 90% of all animal species belongs  
beetles are most numerous of animals:
  - b. Vertebrates: animals that have a backbone that protects the main nerve/spinal cord
    - a. fishes
    - b. amphibians
    - c. reptiles
    - d. birds
    - e. mammals

## 1.5 World Distribution flora and fauna

Rainforests are forests characterized by high rainfall, with definitions setting minimum normal annual rainfall between 1750–2000 mm (68-78 inches). The monsoon trough, alternately known as the inter-tropical convergence zone, plays a significant role in creating Earth's tropical rain forests.

40 to 75% of all species on the world's habitats are indigenous to the rainforests. It has been estimated that many millions of species of plants, insects, and microorganisms are still undiscovered. Tropical rainforests have been called the "jewels of the Earth", and the "world's largest pharmacy", because over one quarter of natural medicines have been discovered there. Rainforests are also responsible for 28% of the world's oxygen turn over, often misunderstood as oxygen production, processing it through photosynthesis

The undergrowth in a rainforest is restricted in many areas by the lack of sunlight at ground level. This makes it possible to walk through the forest. If the leaf canopy is destroyed or thinned, the ground beneath is soon colonized by a dense, tangled growth of vines, shrubs, and small trees called a jungle. There are two types of rainforest, tropical rainforest and temperate rainforest.

Many of the world's rainforests are associated with the location of the monsoon trough, also known as the inter-tropical convergence zone. Tropical rainforests are rainforests in the tropics, found near the Equator (between the Tropic of Cancer and Tropic of Capricorn) and present in Southeast Asia (Myanmar to Philippines, Indonesia, Papua New Guinea, and northeastern Australia), Sri Lanka, Sub-Saharan Africa from Cameroon to the Congo (Congo Rainforest), South America (e.g. the Amazon Rainforest), Central America (e.g. Bosawás, southern Yucatan Peninsula-El Peten-Belize-Calakmul), and on many of the Pacific Islands (such as Hawaii). Tropical rainforests have been called the "Earth's lungs," although it is now known that rainforests contribute little net oxygen additions to the atmosphere through photosynthesis.

Temperate rainforests are rainforests in temperate regions. They can be found in North America (in the Pacific Northwest, the British Columbia Coast, and in the inland rainforest of the Rocky Mountain Trench east of Prince George), in Europe (parts of the British Isles such as the coastal areas of Ireland, Scotland, southern Norway, parts of the western Balkans along the Adriatic coast, as well as in the North West of Spain and coastal areas of the eastern Black Sea, including Georgia and coastal Turkey), in East Asia (in southern China, Taiwan, much of Japan and Korea, and on Sakhalin Island and the adjacent Russian Far East coast), in South America (southern Chile) and also Australia and New Zealand.

India is a land of varied flora, fauna and biodiversity. India is one of the twelve mega-diverse nations of the World. Two of India's great mountain ranges, the Eastern Himalayas and the Western Ghats have been designated among the world's eighteen 'hotspots' of biodiversity. But In the last few decades we have seen a steady increase in the extinction rate of flora, fauna etc. all over world including India and so now, conservation of biological diversity is of paramount importance to the survival of man. Conservation of biological diversity leads to conservation of essential ecological diversity to preserve the continuity of food chains.

Let me sum up the whole episode like this:

The tree that lives for 50 years generates Rs. 5.3.lakhs worth of Oxygen, recycles rs.6.4 lakhs worth of fertility, facilitates Rs.6.4 lakhs worth of soil erosion control, creates Rs.10.5 lakhs worth of air pollution control and provides Rs.5.3 lakhs worth of shelter for birds and animals. Besides it provides flowers, fruits, and timber. So when one tree falls or is felled something worth more than Rs. 33.9 lakhs destroyed.

Flora and fauna provide an economic benefit to human society. Health agencies and pharmaceutical companies are making major effort to collect and species for compounds that have the ability to fight major diseases. Nearly everyone enjoys wildlife and forest aesthetically and joy makes our lives good. Both flora and fauna of a region is studied separately and together by a number of different types of scientists. Botanists, or plant scientists, mainly study flora, while zoologists study fauna. Ecologists and those studying conservation look at both flora and fauna together, as the two groups are dependent on each other to survive. Geographers study the flora and fauna to know the spatial distribution and variations. Fauna consists of Mammals, Cats, Monkeys, Other Mammals, Reptiles and Amphibians, Turtles, Snakes, Lizards, Crocodiles and *Birds where as* Flora trees, Fruits and Nuts, Orchids, Medicinal Plants and Other

Plant Life. Habitat destruction, invasive foreign plants and animals, over collection, and other environmental damage are eroding our natural plant communities. Some species have declined to such small numbers that a bad storm or a plant collector could wipe them out in minutes. Without intervention they will be lost forever.

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