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***Mala Moni Kalita, Asstt. Prof***

**GLOBAL DISTRIBUTION OF MAJOR PLANTS AND ANIMALS**

Humans, animals and plants are globally distributed, they are termed cosmopolitan in their distribution some other animals have restricted distribution and they are said to be endemic, there may be some plants such as coconuts (Cocos nucifera) which have very wide endemic range which are defined throughout the tropics and they are said to be pan-tropical in their distribution. However, coconuts are found Africa, tropical Asia, and South America.

Some animal species are restricted to a particular continent for instance, the giraffe is only found in Africa and in no other part of the world, the marmoset monkeys are found only in South America. However, there are also plants and animals that are restricted to a very small area of the world. For instance, the California red wood trees which are likely restricted to California; they live for over 2000 years and they are the longest trees in the world, they can’t be found in anywhere else in the world. These California red woods are example of plants with a very narrow endemic range.

In some cases, the pattern of distribution of plants and animals may be discontinuous or disjoint. When it is discontinuous or disjoint, then we agree that that particular animal or plant may be found in two widely separate areas in other word; they may be found let say in Central America and in Indonesia and not in any other area in between them. However, it is always the biogeographers task to find out how this type of distribution came about in view of the fact that the distance which separates them is so great that makes it seem impossible for the species to have migrated from one area to another. An example of this type of distribution of animal is called Tapir- an animal that is found in South America and Malaysia. Certainly, questions as to how this distribution came about must have given rise to a number of theories which shall be considered later. Some of these theories include-

1. [The theory of continental drift which is also known Wegener’s theory or Jigsaw theory](https://www.jotscroll.com/forums/3/posts/177/continental-drift-theory-evidences-causes-of-continental-drift.html)
2. Darwin’s theory of evolution
3. Theory of plate tectonic
4. The theory of climate

Factors influencing distribution of plants and animals in the world are- Abiotic and biotic factors

Global distribution of plants and animals depends on abiotic and biotic factors, the abiotic are the non-living factors and also the biotic factors or the living factors. These two factors are further classified into two categories such as physical factors and biological factors. The physical factors consist of rocks; food, air, soil, water, nutrients, humidity, temperature light, and salinity among others while the biological factor include predation, diseases, and competition, human and animals

Biotic factors affecting distribution of plants and animals

1. Rocks– the rocks of the atmosphere have to be weathered and the soil formed before higher plant can grow. The immediate environmental factor affecting plant is therefore the soil, but by influencing the characteristic of soil especially the azonal soil. Rocks favour certain plants; and, in some instances, differences in rocks adapt them to different species of Lichens and Mosses.
2. Food– all living species must have food to survive, without the food they die, this is one of the foundations for the differences in limitation of plants animal in different locations of the world.
3. Air– all living things (plants and animals) need air to breathe and for survival, air is needed for respiration to take place in organism. All living organisms only survive where there is air in abundance, when the air pressure is low, especially in higher altitudes some may find it difficult to breathe because of the insufficient amount of oxygen present at such height. Oxygen and carbon dioxides are very important for both plants and animals, oxygen is essential for respiration and it is utilized during various growth and development process, while carbon dioxide is needed for photosynthesis to take place.
4. Water– water enter the [ecosystem](https://www.jotscroll.com/forums/3/posts/137/ecosystems-definition-types-and-components-of-an-ecosystem.html) through snow, drizzle, sleet, rain, hail and graupel which is generally termed precipitation- precipitation determines, along with mean temperature, the world-wide distribution of [Biomes](https://www.jotscroll.com/forums/3/posts/132/biomes-of-the-world-definition-of-biome-types-characteristics.html). Some animals are aquatic in nature, they must have water to live in, and on the other hand, some animals including desert rats are able to survive in arid areas where they are unlikely ever to drink water. Water is very important for vital functions, however, only animals that can conserve water are found in the deserts. The [desert animals](https://www.jotscroll.com/forums/3/posts/133/desert-biomes-desert-biome-facts-location-plants-and-animals.html) like pocket mice and kangaroo rats (and their old world counterparts, gerbils) get most of the moisture they need from the seeds and grains they eat, the reptiles have many adaptations to conserve water such as producing highly concentrated urine and nearly dry faeces that allow them to eliminate body waste without losing precious moisture. This is a similar case with the desert plants. For instance, Xerophytes, such as cacti, Camel thorn tree, Saguaro, prickly pear and Joshua trees, have unique features for adaptation and for storing and conserving water. They often have few or no leaves, which reduce transpiration. The plants have fleshly stems and swollen leaves, they absorbs large amounts of water during the infrequent period of rain, thereby swelling up the stems only to contract later as moisture is slowly lost through transpiration. The Phreatophytes- are plants that grow extremely long roots; the roots allow them to acquire moisture at or near the water table
5. Nutrients– Nitrogen is needed to make proteins, enzymes, nucleotides and vitamins. Phosphorus is used in the formation of phospholipids and other structures.
6. Soil- For plants, soil type is a major factor in deciding the type and variety of species growing in a particular area as the minerals, water contents, microorganisms etc. all differ in different soils. Soil is a combination of various organic and inorganic matters and with varying content, the water retention capacity of the soil, the fertility, and presence of minerals changes. While clay soil can retain more water but less air, black soil is ideal for plant growth with balance of air and water retention capacities. The soil’s pH helps the absorption of nutrients by the plant. If the soil is acidic, desertification can take place and ruin the chances for plant habitat.
7. Temperature- the ability to survive extremes temperature varies widely among plants and animals. Animals respond to variation in temperature both physiologically and behaviourally. For instance, birds and mammals are hot blooded animals (endotherms), they maintain relatively high body temperatures using the heat by their own metabolism. Other animals (such as insects, reptiles, amphibians, fish among others) are termed cold blooded (ectotherms), they regulate their body temperatures using the surrounding temperature or by using the ambient temperature. Ectotherms- use sources of heat such as solar radiation (direct and indirect) and conduction to help adjust their body temperature, hanging the position of fur or feathers (example of such include the Carolina and Chickadee ), these may be seen sweating, shivering panting, burrowing, hibernating and seeking shade in trees or water. Some desert animals may even store water in their body. Consequently, plants like animals are not able to move away in other to escape the high or the low temperatures in their environment; in this case, photosynthesis slows down or stops when temperatures get too high or too low. The leaves of trees can lose some heat by evapotranspiration (the loss of water through small holes in leaves). However, some plants may have hairy stems and leaves which helps to withstand the low temperatures, they may also have more solutes in cytoplasm to reduce freezing point while other have short growth and they grow very close to each other to resist the cold temperatures and wind.
8. Light– light is an important climatic factor that is used for the production of chlorophyll and photosynthesis; light has a big influence on a daily and seasonal activity of plants and animals. Light is need for photosynthesis to take place and it is the main source of energy in almost all ecosystems. Energy enters the ecosystem through the source of light- the sun.

## **Abiotic factors affecting distribution of plants and animals**

1. **Competition**– Competitive interactions have been seen to be one of the major factors that diminish populations of plants and animals from their main habitats; plants and animal compete for space, space is needed for reproduction, exercise and a feeding. There is also competition for several resources such as food, water, and mates. All of these can affect how a species is distributed; due to limited resources, populations may be evenly distributed to minimize competition, as is found in the forests habitat, where competition for sunlight produces an even distribution of trees.
2. **Predation**– Predation affects the global distribution and abundance of plant and animal species, the strength and direction of energy flow within a system and the diversity and composition of communities. Predators also play an essential role in evolution.
3. **Diseases**– plants diseases can be fungal, bacterial, viral or through animal in origin; they include insects/pest, plant diseases, and invasive weeds. These diseases affect food crops, causing significant losses to farmers and threatening [food security](https://www.jotscroll.com/forums/23/posts/216/climate-change-and-food-security-climate-change-on-agriculture.html). For instance, banana diseases, Locusts, fruit flies, armyworm, cassava mosaic and wheat rusts are very destructive to plant live; their outbreaks and upsurges can cause huge losses to crops and pastures, threatening the livelihoods of vulnerable farmers and the food and nutrition security of millions at a time. However, plant population will obviously reduce in such environment and will thrive well in areas where such diseases are not found. Animals are no left out in such situation, they are also affected by various diseases outbreaks which is brought about by [global warming](https://www.jotscroll.com/forums/3/posts/179/global-warming-causes-effects-and-solutions.html), which severely affect the balance of an ecosystem; this is seen through changes in animal and plant global distribution, as well as their behaviour. If there are more plants than usual in an area, populations of animals that eat that plant may increase. If one animal’s population increases, the population of animals that eats that animal might also increase. Other changes in the community will cause a population to decrease. If a population becomes diseased, the population may decrease and the population of animals that eat the diseased animals will also decrease.
4. **Humans-**Humans can influence animal and plant populations in various ways hence, causing them to migrate away from their natural habitat to a new environment. When humans develop land for houses and buildings, they cut down trees and change animal and plant habitats. Some animals like the skunk and raccoon the can adapt, but other animals can’t adapt and their populations are affected. Pollution can also hurt animal and plant populations. Sometimes hunting can affect animal populations. For instance, whale populations have been lowered because of over hunting. Man contributes to the global distribution of plant animals through urbanization and agricultural activity, these developments have displaced both animals and plants from their natural habitats and some plant and animal species are forced to move to a new and strange environment since they can’t cope with the harsh condition, while others have gone into extinction.