

Biodiversity Definition

“Biodiversity is the variation among living organisms from different sources including terrestrial, marine and desert ecosystems”

Biodiversity refers to the variety of living species on Earth, including plants, animals, bacteria, and fungi. While Earth's biodiversity is so rich that many species have yet to be discovered, many species are being threatened with extinction due to human activities, putting the Earth's magnificent biodiversity at risk.

What is Biodiversity?

Biodiversity describes the richness and variety of life on earth. It is the most complex and important feature of our planet. Without biodiversity, life would not sustain.

The term biodiversity was coined in 1985. It is important in natural as well as artificial ecosystems. It refers to variabilities among plants, animals and microorganism species.

Biodiversity includes the number of different organisms and their relative frequencies in an ecosystem. It also reflects the organization of organisms at different levels.

Biodiversity holds ecological and economic significance. It provides us with nourishment, housing, fuel, clothing and several other resources. It also extracts monetary benefits through tourism. Therefore, it is very important to have a good knowledge of biodiversity for a sustainable livelihood.

Biodiversity is a term used to describe the enormous variety of life on Earth. It can be used more specifically to refer to all of the species in one region or ecosystem. Biodiversity refers to every living thing, including plants, bacteria, animals, and humans. Scientists have estimated that there are around 8.7 million species of plants and animals in existence. However, only around 1.2 million species have been identified and described so far, most of which are insects. This means that millions of other organisms remain a complete mystery.

Over generations, all of the species that are currently alive today have evolved unique traits that make them distinct from other species. These differences are what scientists use to tell one species from another. Organisms that have evolved to be so different from one another that they can no longer reproduce with each other are considered different species. All organisms that can reproduce with each other fall into one species.

Scientists are interested in how much biodiversity there is on a global scale, given that there is still so much biodiversity to discover. They also study how many species exist in single ecosystems, such as a forest, grassland, tundra, or lake. A single grassland can contain a wide range of species, from beetles to snakes to antelopes. Ecosystems that host the most biodiversity tend to have ideal environmental conditions for plant growth, like the warm and wet climate of tropical regions. Ecosystems can also contain species too small to see with the naked eye.

Looking at samples of soil or water through a microscope reveals a whole world of bacteria and other tiny organisms.

*Some areas in the world, such as areas of Mexico, South Africa, Brazil, the southwestern United States, and Madagascar, have more biodiversity than others. Areas with extremely high levels of biodiversity are called **hotspots**. **Endemic species**—species that are only found in one particular location—are also found in hotspots.*

All of the Earth's species work together to survive and maintain their ecosystems. For example, the grass in pastures feeds cattle. Cattle then produce manure that returns nutrients to the soil, which helps to grow more grass. This manure can also be used to fertilize cropland. Many species provide important benefits to humans, including food, clothing, and medicine.

*Much of the Earth's biodiversity, however, is in **jeopardy** due to human consumption and other activities that disturb and even destroy ecosystems. Pollution, climate change, and population growth are all threats to biodiversity. These threats have caused an unprecedented rise in the rate of species **extinction**. Some scientists estimate that half of all species on Earth will be wiped out within the next century. Conservation efforts are necessary to preserve biodiversity and protect endangered species and their habitats.*

Types of Biodiversity

There are the following three different types of biodiversity:

- Genetic Biodiversity
- Species Biodiversity
- Ecological Biodiversity

BIODIVERSITY AND ITS TYPES



1 Genetic diversity

2 Species diversity

3 Ecological diversity

Types of Biodiversity

Species diversity

Species diversity refers to the variety of different types of species found in a particular area. It is the biodiversity at the most basic level. It includes all the species ranging from plants to different microorganisms.

No two individuals of the same species are exactly similar. For example, humans show a lot of diversity among themselves.

Genetic diversity

It refers to the variations among the genetic resources of the organisms. Every individual of a particular species differs from each other in their genetic constitution. That is why every human looks different from each other. Similarly, there are different varieties in the same species of rice, wheat, maize, barley, etc.

Ecological diversity

An ecosystem is a collection of living and non-living organisms and their interaction with each other. Ecological biodiversity refers to the variations in the plant and animal species living together and connected by food chains and food webs.

It is the diversity observed among the different [ecosystems](#) in a region. Diversity in different ecosystems like deserts, rainforests, mangroves, etc., include ecological diversity.

Importance of Biodiversity

Biodiversity and its maintenance are very important for sustaining life on earth. A few of the reasons explaining the importance of biodiversity are:

Ecological Stability

Every species has a specific role in an ecosystem. They capture and store energy and also produce and decompose organic matter. The ecosystem supports the services without which humans cannot survive. A diverse ecosystem is more productive and can withstand environmental stress.

Economic Importance

Biodiversity is a reservoir of resources for the manufacture of food, cosmetic products and pharmaceuticals.

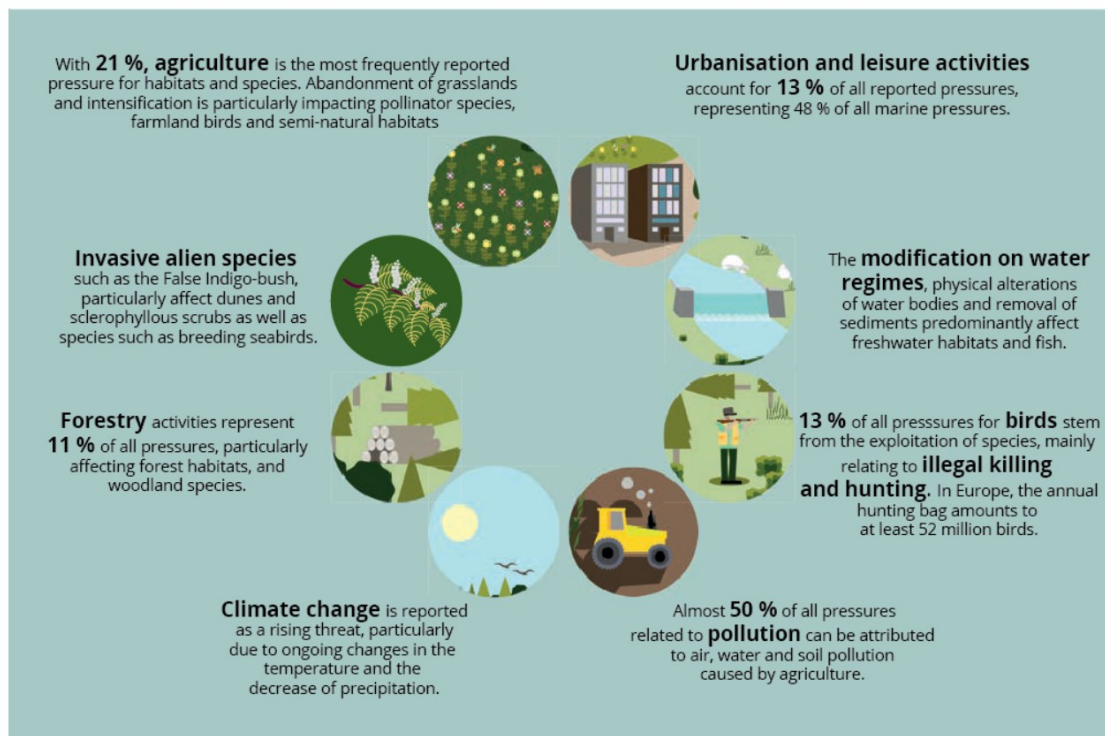
Crops livestock, fishery, and forests are a rich sources of food.

Wild plants such as Cinchona and Foxglove plant are used for medicinal purposes.

Wood, fibres, perfumes, lubricants, rubber, resins, poison and cork are all derived from different plant species.

The national parks and sanctuaries are a source of tourism. They are a source of beauty and joy for many people.

What causes biodiversity loss in Europe?



https://www.youtube.com/watch?v=GIWNuzrqe7U&ab_channel=TheRoyalSociety

https://www.youtube.com/watch?v=GK_vRtHJZu4&t=35s&ab_channel=TED-Ed

https://www.youtube.com/watch?v=wXJiHr8jWBs&ab_channel=FuseSchool-GlobalEducation

https://www.youtube.com/watch?v=XTC4qiXd36Q&t=68s&ab_channel=NaturalHistoryMuseum