

# BIODIVERSITY SOS: UNRAVELING THE CRISIS AND CHARTING A SUSTAINABLE COURSE

**Sanya Sharma,  
Sri Venkateswara college,  
University of Delhi, New Delhi**

One of the most amazing things about our natural world is the diversity of life that exists in it. The term “biodiversity” refers to the variety of living organisms, their genetic differences, and each species’ relationship to one another. Biodiversity is often called the “web of life” because it shows how all the species work together to support life and ecological balance on Earth. Today, our modern lives and patterns of overconsumption are putting a strain on the planet’s natural resources. Aside from climate change, biodiversity loss is another huge issue we have to tackle. According to the WWF’s Living Planet Report 2022, since 1970, 69% of our planet’s wildlife population has been lost due to land-use change, over-harvesting, habitat fragmentation, invasive species, and pollution.

In 2017, scientists declared a “biological annihilation,” signaling the Earth’s potential entry into its sixth mass extinction event. With between 5.3 million and one trillion species on Earth, human activities, though constituting only 0.01% of the planet’s life, are jeopardizing its health. The consequences of biodiversity loss extend beyond the extinction of rare species, directly affecting humans.

There are between 5.3 million and one trillion species on Earth and while humans just make up 0.01% of the planet’s life, their activities are compromising its health and killing millions of animals and plants every year. Biodiversity loss is happening at an extremely wide scale and,



if left unchecked, it can have devastating social, economic, and environmental consequences. What are the benefits of biodiversity and why is it so important to protect it?

Understanding the vital role of biodiversity in human life reveals its multifaceted benefits:

## 1. Disease Resistance

Genetically diverse populations have better chances of surviving a catastrophe like a pandemic. Diverse populations carry genetic codes that make certain members of their group less vulnerable. When those carrying these genetic codes reproduce, disease resistance is passed along and the species’ survival is ensured.

## 2. Carbon Sequestration

Carbon sequestration is the process of capturing and storing carbon dioxide from the atmosphere. It reduces atmospheric carbon dioxide and its ultimate goal is to reduce climate change. Vegetation and soil in ecosystems like forests, peatlands, grasslands, seabeds, wetlands, and kelp beds act as carbon sinks, removing carbon dioxide from the atmosphere.

### 3. Storm, Flooding, and Coastal Erosion Regulation

Coastal sea levels are rising and the World Economic Forum says that as many as 410 million people could be affected by the end of the century. While 59% of sea level rise is expected to be in tropical Asia, countries such as China, France, Senegal, Nigeria, and the United States are also at risk. Restoration and protection of coastal ecosystems such as salt marshes and mudflats will be an important aspect of flood prevention for low-lying coastal communities. Saltmarsh plants and microbes stabilise and bind soil together. Coupled with greater root biomass, these ecosystems can provide better resistance to soil erosion.

Ecosystems like coral reefs, seagrass, and soft-bottom ecosystems work as buffers against waves or storms, protecting coastal communities that are prone to typhoons.

### 4. Food Security

Our food system and agriculture are strongly linked to biodiversity. Millions of species work together to supply us with a variety of grains, vegetables, fruits, and animal products. Food production relies on many “services” that biodiversity provides. This includes pollination, maintenance of soil fertility, resistance to pests and diseases, climate maintenance, and water filtration.

### 5. Overall Health and Happiness

Whether it is strolling in a park in the city, going to the mountains, or swimming in the sea, being in contact with nature has a host of benefits for humans. Exposure to green and blue spaces outdoors improves our working memory, attention control, and cognitive flexibility. Researchers also found that aside from cognitive improvements, contact with nature is associated with increased positive social interactions, happiness, having a sense of meaning in life, as well as decreases in mental stress.

### CONSERVATION

Biodiversity conservation covers a wide range of activities that can be done. Protecting habitats is an extremely important biodiversity conservation activity; done by identifying the habitats facing threats and eliminating these threats in order to maintain the natural area. This also comes in the form of leaving wildlife undisturbed, especially nesting and denning areas, and wildlife habitats can be promoted by setting up man-made bird and bat houses. Limiting and modifying agricultural activities also falls into the category of biodiversity conservation. This can be done by conserving water in wetlands and reducing irrigation, and by managing livestock grazing through maintaining good quality range conditions and leaving areas ungrazed.

Replacing resource-intensive products damaging to biodiversity requires embracing sustainable alternatives. Lab-grown meat and microalgae as a palm oil alternative exemplify this shift. Lab-grown meat, cultivated through innovative processes, presents a solution to traditional meat production challenges. Similarly, microalgae provides a sustainable substitute for palm oil in various consumer products. Overfishing poses a significant threat to marine ecosystems. Vertical ocean farming, championed by GreenWave, offers a restorative solution. Described as an 'underwater garden,' this method mimics natural habitats, growing kelp, mussels, scallops, and oysters. These farms reduce the need for destructive trawling, providing food for diverse marine life while minimizing environmental impact.

In the End.....

Biodiversity is like an insurance policy for the planet, protecting species and communities against sudden changes and stresses. Many conservation campaigns focus on saving individual species from extinction, but it's important to remember that no organism exists in isolation. If a species is at risk, chances are that its ecosystem is in danger as well.