

# Different Levels and the Values of the Bio-Diversity

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**ABSTRACT:** *The variety of life on Earth, comprising millions of plants, animals, microorganisms and the genes they carry, refers to biodiversity or biological diversity. It simply means the presence of the natural habitats of a wide range of plant and animal species or the diversity of plant and animal life in a given habitat. Biodiversity has a large number of values and is typically represented at three stages genetic diversity, diversity of the organisms, diversity of the environment. An ecosystem is a group of life forms (biotic components) that interact with one another and their environment's non-living elements (abiotic components). This implies that the ecosystem is an interacting group of organisms and their physical environment. In the paper the various levels and the principles of the biodiversity has been discussed that will help the researchers to become aware about the biodiversity and the interaction of the different living beings with their corresponding environment.*

**KEYWORDS:** *Biodiversity, Conservation, Genetic diversity, Ecosystem diversity, Species diversity, Values.*

## INTRODUCTION

The word 'biodiversity' has diverse meanings. It is 'life diversity at all stages of biological organization,' according to Gaston and Spicer (2004)[1]. Biodiversity is often seen as a measure of the relative diversity of the various habitats among the species present. Diversity is variation within species and comparative diversity between habitats are included. The totality of genes, organisms, and ecosystems of a region can also be described as biodiversity. Biodiversity is defined by the Convention on Biological Diversity (Glowka et al, 1994) as the heterogeneity between living organisms from all sources, including, but not limited to, terrestrial, marine and other aquatic ecosystems and the ecological complexes to which they belong, including diversity within species, between species and ecosystems[2].

A literature review showed that tremendous efforts have been made and a number of scientists have been working a lot on biodiversity. Kaushik et al, (2008), Odum (1971), Wilson (1988), Nair (1992), Bhatt (1997), Subba Rao (2001), Verma et al, (2015, 2016a, 2016b), Prakash et al, (2015, 2016a, 2016b) are some of them. 2016a, 2016b, Verma (2016a, 2016b) and so forth[3][4].

## BIODIVERSITY LEVELS

At the following three stages, biodiversity is discussed and all three work together to establish the mystery of life on Earth:

1. Genetic diversity
2. Diversity of Organisms
3. Diversity of the Environment

Genetic diversity is the diversity within a population of the fundamental units of genetic knowledge (genes) which are transmitted from one generation to the next. Genetic diversity

results in differences, so the basis of speciation is the underlying source of biodiversity and the amount of genetic variation. Genetic diversity helps a population to adapt to its climate, which is crucial for natural selection. Genetic diversity within a species also increases with environmental variability, but not with environmental variability. The same degree of genetic variation occurs in all animal classes. Different populations of a species must be conserved in order to preserve genetic diversity.

The diversity of species relates to the variety of species within an area. It is the variability found within a species' population or between different species. The species is the true basic unit used for the classification of organisms, and its diversity is the level of biodiversity definition that is most widely used. It broadly reflects the richness of species and their abundance in a population. Consequently, organisms are distinct units of diversity, each playing a particular role in the ecosystem. The number and type of species, as well as the number of individuals per species, differ in nature, contributing to greater diversity. The species are divided into families according to the distribution of shares.

An ecosystem is a group of life forms (biotic components) that interact with one another and their environment's non-living elements (abiotic components). This implies that the ecosystem is an interacting group of organisms and their physical environment. An environment can be as big as or as small as the back of a spider crab's Great Barrier Reef a shell that provides plants and other species, such as sponges, algae and worms, with a shelter. Therefore, ecosystem diversity is the diversity of ecosystems (places where an organism or a population of organisms naturally occurs) that include the various types of life within them. On three levels, diversity occurs at the level of culture and environment. Alpha diversity (within group diversity) is first, beta diversity (diversity between communities) is second, and gamma diversity is third (diversity of the habitats over the total landscape or geographical area).

### VALUES OF BIODIVERSITY

Biodiversity is of immense significance in nearly all facets of life. Biodiversity's various applications include[5]:

1. Consumptive use in which products of biodiversity are directly harvested and consumed, e.g. fuels, fruit, medications, medicines, fibres, etc. For human beings, a significant number of wild plants and animals are sources of food. Around 75% of the world's population depends on plants or extracts of plants. Medicinal goods: The miracle drug penicillin used as an antibiotic is derived from a fungus called *Penicillium*, a bacterial tetracycline, for example. Quinine, the malaria antidote, is derived from Cinchona tree bark, two anticancer drugs are obtained from Catharanthus plant and so on, namely vinblastin and vincristin. Our woods have been used as fuelwood for centuries. Coal, petroleum and natural gas from fossil fuels are all products of fossilized biodiversity.
2. Efficient use in which animal products such as musk from musk deer, silk from silkworm, sheep wool, fur from many species, lac from lac insects, etc. are commercially traded. In addition, many sectors rely on the efficient use of biodiversity values, such as the paper and pulp industry, the plywood industry, the railway sleeper industry, the textile industry, the leather industry and the pearl industry.
3. Social meaning, in which people's social life, traditions, faith and psycho-spiritual elements are related, i.e. biodiversity, connected to various cultures, has distinct social

value. Many of the plants in our country are considered sacred and sacred, such as Tulsi, Peepal, Mango, Lotus, etc. These plants' leaves, fruits or flowers are used in worship, or the plant itself is worshipped. Tribal social life, songs, dances and customs are closely related to wildlife. In our psycho-spiritual arena, many animals such as donkey, bull, peacock, owl, snake, etc. also have a significant position and therefore hold unique social significance.

4. Ethical meaning or value of life, which is based on the 'Live and Let Live' principle. Biodiversity is valuable because if we want our human race to live and continue, then all biodiversity, i.e. 'all life must be preserved', must be protected.
5. Aesthetic appeal that entertains eco-tourism. People from far and wide spend a great deal of time and money visiting wilderness areas where they can appreciate biodiversity's aesthetic value, because biodiversity has great aesthetic value.
6. Service benefit of the environment, which acknowledges the non-consumptive use of self-maintenance of the ecosystem and different ecosystems. It refers to ecosystem services such as soil erosion prevention, flood prevention, soil fertility maintenance, nutrient cycling, nitrogen fixation, water cycling, pollutant absorption and the reduction of the danger of global warming, etc.
7. Scientific and developmental importance, in which each species offers scientists some hints as to how life on earth has evolved and will continue to evolve. In fact, biodiversity helps scientists understand how life works and the role of each species in ecosystem sustainability. Moreover, biodiversity still has many other values.

Therefore, various levels of biodiversity: habitats, animals and genetics, all of which have tremendous potential, and a reduction in biodiversity would lead to significant economic downturns. Losses in environmental and socio-cultural terms. If we want our human race to thrive, then because biodiversity has meaning for life, we must preserve all biodiversity.

### CONSERVING BIODIVERSITY

There is a rich diversity of animals, plants and microbial life in the living world, which tends to be well adapted to the climate. For the shared survival and life of living beings, this complex nature must be preserved[6]. Biodiversity is depleted by habitat loss and destruction, resource exploitation, unprecedented climate change, deforestation, pollution, etc.

### CONCLUSION

Diseases, changing agriculture, poaching of wild life, etc. Because all the benefits of biodiversity are derived from human beings, they should therefore take careful care of the protection of biodiversity in all its forms and the good health and safety of the future generation[7][8]. Biodiversity protection means the proper management by human beings of the biosphere in such a way that it offers maximum benefits for the present generation and also enhances its ability to meet the needs of future generations. Saving habitats and ecosystems rather than attempting to preserve a single species is the best way to protect biodiversity. Biological conservation: Today, diversity has become a worldwide issue[9]. There are essentially two primary biodiversity conservation approaches: in-situ conservation (within the conservation of biodiversity, Habitat) and conservation ex-situ (outside habitat).

### REFERENCES

- [1] Gaston K. J. and Spicer J. I. (2004)., *Biodiversity: An Introduction*. 2nd ed. Blackwell Publishing. .

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- [2] Glowka L. et al, "A Guide to the Convention on Biological Diversity Environmental Policy and Law Paper No. 30 IUCN Gland and Cambridge. (1994)."
  - [3] M. J. Nieuwenhuijsen, "Environmental studies," in *Handbook of Spatial Epidemiology*, 2016.
  - [4] R. L. Millstein, "Environmental Ethics," in *History, Philosophy and Theory of the Life Sciences*, 2013.
  - [5] P. Dasgupta, A. P. Kinzig, and C. Perrings, "The Value of Biodiversity," in *Encyclopedia of Biodiversity: Second Edition*, 2013.
  - [6] N. G. Swenson *et al.*, "Phylogenetic and functional alpha and beta diversity in temperate and tropical tree communities," *Ecology*, 2012, doi: 10.1890/11-0402.1.
  - [7] E. Nevo, "Genetic Diversity," in *Encyclopedia of Biodiversity: Second Edition*, 2001.
  - [8] R. Frankham, "Genetics and extinction," *Biological Conservation*. 2005, doi: 10.1016/j.biocon.2005.05.002.
  - [9] S. Harrop, "Biodiversity and Conservation," in *The Handbook of Global Climate and Environment Policy*, 2013.