

Biodiversity

Introduction:

Bio → Life Diversity → Variety

Biodiversity means wide variety of life on the earth.

Our planet earth (biosphere) contains more than 20 million species of organisms. But, of which only 1.4 million species have been identified so far. These species differ widely from one another. This variation in living organisms is called Biodiversity.

Definition:

Biodiversity is defined as "the variety & variability among all groups of living organisms & the ecosystem in which they occur."

Significance (or) Importance of biodiversity

* Biodiversity is very important for human life, as we depend on plants, micro organisms, earth's animals for our food, medicine & industrial products.

* Biodiversity protects the fresh air, clean water & productive land.

* It is also important for forestry, fisheries, agriculture which depend on rich variety of biological resources available in nature.

* Loss of biodiversity has serious economic

and social costs for any country

Impact of biodiversity loss:

✓ The farmers prefer hybrid seeds, as a result many plant species become extinct.

✓ For the production of drugs the pharmaceutical companies collect wild plants, so several medicinal plants now become extinct.

✓ Tropical forest is the main sources of world's medicine.

Ex: *Taxus baccata*, a tree growing in Sub-Himalayan regions, once believed to be of no value is now found to be effective against cancer. However, this plant has become an endangered species now.

Classification (or) levels of biodiversity:

* Genetic diversity

* Species

* Community (or) Ecosystem diversity

Genetic Diversity:

Genetic: A species with different genetic characteristics is known as sub-species or "genera"

Genetic diversity is the diversity within species

(i) Variation of genes within the species.

ex: Rice varieties → *Oryza sativa*

Teak wood varieties → ex: Indian teak, Burma teak, Malasian teak etc.

Species Diversity:

Species: A discrete group of organisms of the same kind is known as species.

Species diversity is the diversity between different species. The sum of varieties of all the living organisms at the species level is known as species diversity.

Ex: Total no of living species → more than 20 million → Identified 1.5

Plant species → Apple, mango, grapes etc

Animal " → Lion, Tiger, elephant etc

Community or Ecosystem Diversity:

Ecosystem: It is a set of biotic components (plants, animals → micro organisms) interacting with one another and with abiotic components (Soil, air, water)

The diversity at the ecological or habitat level is known as ecosystem diversity. A large region with different ecosystems can be considered as ecosystem diversity.

ex: River ecosystem (Fish, aquatic insect, mussels etc)