

### **1.3 BIODIVERSITY**

Biodiversity is the variety and differences among living organisms from all sources, including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part.

#### **1.3.1 PREREQUISITE DISCUSSIONS**

Biologists most often define "biological diversity" or "biodiversity" as the "totality of genes, species, and ecosystems of a region".

It is virtually synonymous with "Life on earth".

The biodiversity found on Earth today consists of many millions of distinct biological species, which is the product of nearly 3.5 billion years of evolution.

## **2.13 BIODIVERSITY**

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### **2.13.1 Levels of Biodiversity**

#### **1) Genetic diversity**

- ❖ It is a level of biodiversity that refers to the total number of genetic characteristics in the genetic makeup of a species.
- ❖ It is distinguished from genetic variability, which describes the tendency of genetic characteristics to vary.

#### **2) Species diversity**

- ❖ It refers to the variety of species within a region.
- ❖ Species diversity is an index that incorporates the number of species in an area and also their relative abundance.
- ❖ It is generally a much more useful value than species richness.

#### **3) Community and Ecosystem diversity**

- ❖ Ecosystem diversity refers to the diversity of a place at the level of ecosystems. This has 3 perspective:
- ❖ Alpha Diversity: Within community diversity. Alpha diversity refers to the diversity of organisms sharing the same Community/Habitat.
- ❖ Beta Diversity: Between community diversity. It refers to the diversity of organisms sharing two habitats.
- ❖ Gamma Diversity: Diversity of the habitat over the total landscape or geographical area is called gamma diversity.

### **1.3.3 BIOGEOGRAPHIC CLASSIFICATION OF INDIA**

Our country can be divided into ten major regions based on the geography, climate and pattern of vegetation seen and the communities of mammals, birds, reptiles, amphibians, insects and other invertebrates that live in them.

Each of these regions contain a variety of ecosystems such as forests, grass lands, lakes, rivers, mountains and hills which have specific plant and animals species.

**India's Biogeographic Zones:**

1. The cold mountainous snow covered Trans-Himalayan region of Ladakh
2. The Himalayan ranges and valleys of Kashmir, Himachal Pradesh, Uttarakhand, Assam and other North-eastern States.
3. The Terrain, the low land where the Himalayan rivers flow into the plains
4. The Gangetic and Brahmaputra plains.
5. The Thar Desert of Rajasthan
6. The semi- arid grassland region of the Deccan plateau, Gujarat, Maharashtra, Andhra Pradesh, Karnataka and Tamilnadu
7. The North eastern States of India
8. The Western Ghats in Maharashtra, Karnataka and Kerala
9. The Andaman and Nicobar Islands
10. The long western and eastern coastal belt with sandy beaches, forests and mangroves.