



# BIODIVERSITY

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# INTRODUCTION

**Biodiversity = Bio + Diversity**

Bio – Life

Diversity – Variety

Biodiversity is the variety of life forms on earth and the essential interdependence of all living things.



Uniformity



Diversity

# SCOPE OF BIODIVERSITY

- **MEDICINE** - Various plants and animals are used in making medicines.
- **INDUSTRY** - Different industries got their raw materials from plants and animals.
- **AGRICULTURE** - Different agricultural products are the products from different plants and animals.
- **CONSERVATION** - Different living organism interact with environment factors, playing a vital role in conserving environment.

# CONSTRAINTS OF BIODIVERSITY

- Over exploitation

Using a renewable resource to the point of diminishing returns.



# CONSTRAINTS OF BIODIVERSITY

- Habitat Loss

The main threat to the world's endangered plants and animals, because of excessive use of resources.



# CONSTRAINTS OF BIODIVERSITY

- Pollution

The contamination of the physical and biological components on earth.



# CONSTRAINTS OF BIODIVERSITY

- Introduced Species

Invasive plants and animals are those which threaten native wildlife, by eating native species, laying eggs, damaging their habitat, spreading disease, etc.

Eg. Parthenium



# CONSTRAINTS OF BIODIVERSITY

- Poaching

The animal parts are sold as novelty items and are sold for their medicinal properties.





# CONSTRAINTS OF BIODIVERSITY

- Global Climate Change

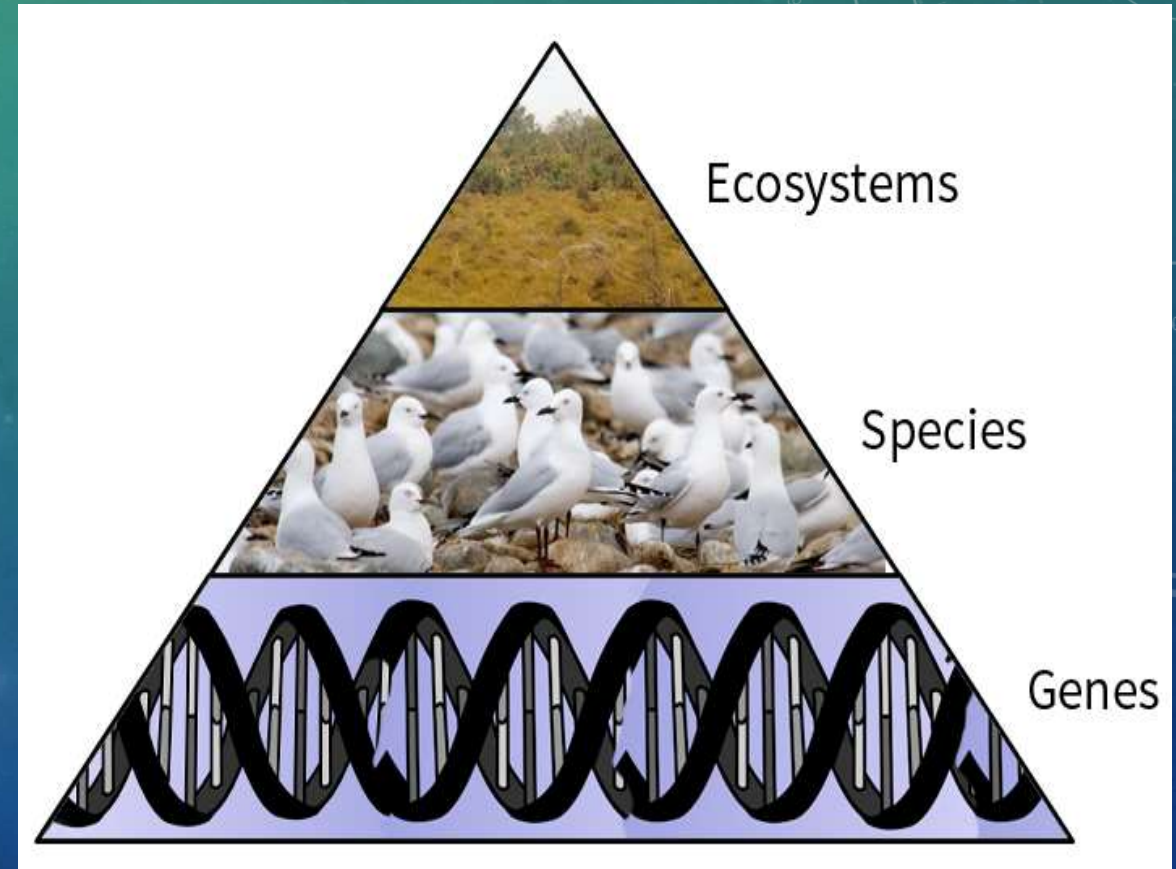
The long-term rise in the average temperature of the Earth's climate system or global warming.



# LEVELS OF BIODIVERSITY

Biodiversity on earth exists in three levels.

1. Genetic Diversity
2. Species Diversity
3. Ecosystem Diversity



# LEVELS OF BIODIVERSITY

## 1. Genetic Diversity

Variation of Genes within a species.



# LEVELS OF BIODIVERSITY

## 2. Species Diversity

Variation of Species within a region.

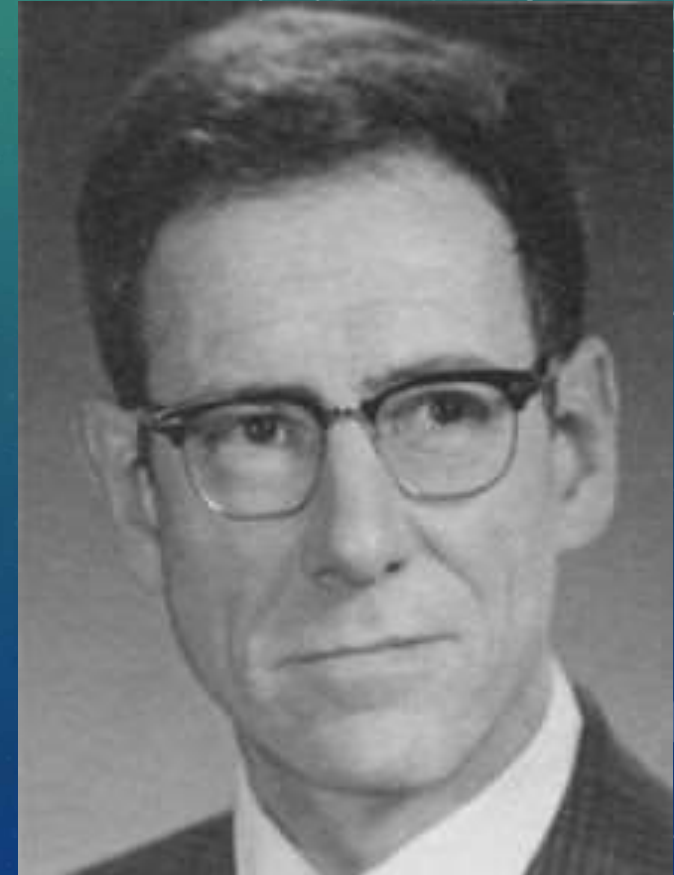


# LEVELS OF BIODIVERSITY

## Types of Species Diversity

Robert Harding Whittaker (December 27, 1920 – October 20, 1980) was a distinguished American plant ecologist, active in the 1950s to the 1970s. He was the first to propose the five kingdom taxonomic classification. Whittaker (1972) described three terms for measuring biodiversity over spatial scales:

1. Alpha diversity
2. Beta diversity
3. Gamma diversity



# LEVELS OF BIODIVERSITY

## Types of Species Diversity

### a. Alpha diversity

The diversity within a particular area or ecosystem; usually expressed by the number of species in that ecosystem.

### b. Beta diversity

A comparison of diversity between ecosystems, usually measured as the amount of species change between the ecosystems.

### c. Gamma diversity

A measure of the overall diversity within a large region.

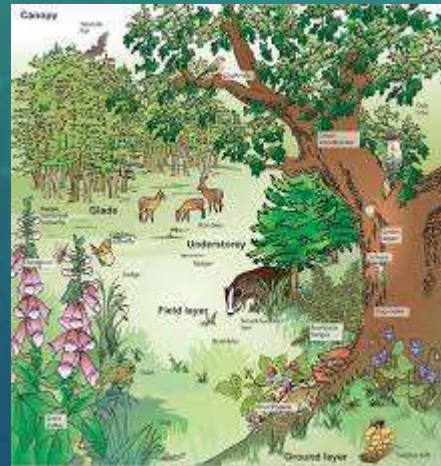
# LEVELS OF BIODIVERSITY

## 3. Ecosystem Diversity

Variations in ecosystems within a geographical location.



POND ECOSYSTEM



FOREST ECOSYSTEM



GRASSLAND ECOSYSTEM



DESERT ECOSYSTEM