

# Biodiversity – Meaning & Levels



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# What is Biodiversity?

'The sum of all the species of plants, animals, fungi, and micro-organisms living on earth in either terrestrial or aquatic habitats.'

- We depends upon biodiversity for **basic needs of survival** i.e. food, fodder, fuel, fibre, fertilizer, timber, liquor, rubber, leather, medicines, and raw materials.
- Biodiversity is condition for long term **sustainability** of the environment, **continuity of life** on earth and maintenance of its **integrity**.



# Levels of Diversity

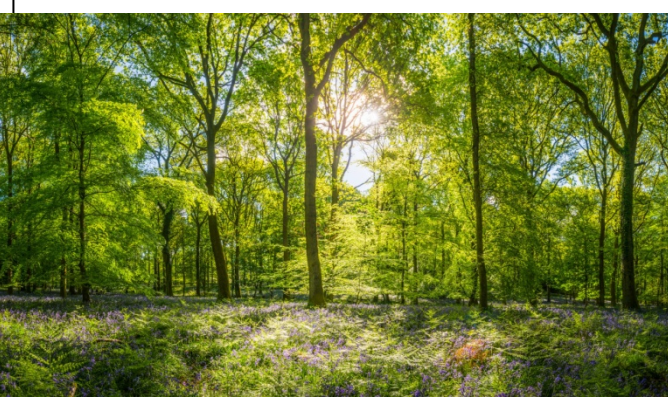
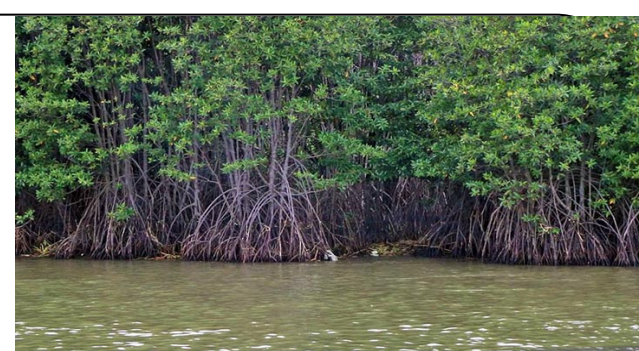
- **Ecosystem diversity**
- **Species diversity**
- **Genetic diversity**



# Ecosystem Diversity

It refers to **various types of ecosystems** and variety of habitats such as:

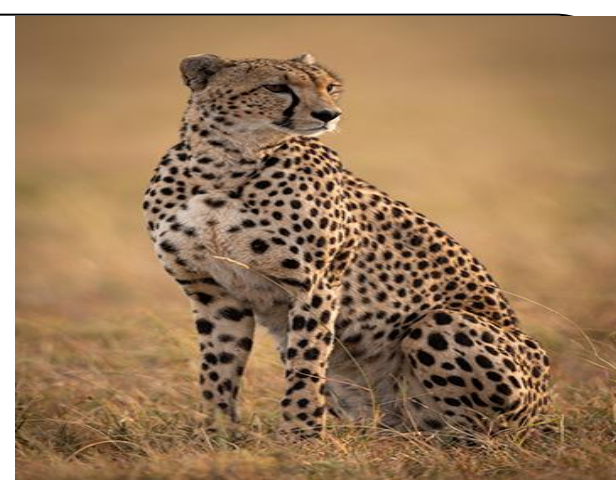
- **Terrestrial** (forest, grassland, alpine & desert ecosystems).
- **Aquatic** (freshwater & marine ecosystems) and
- **Wetlands** (mangroves and estuarine ecosystems) etc. on the earth.





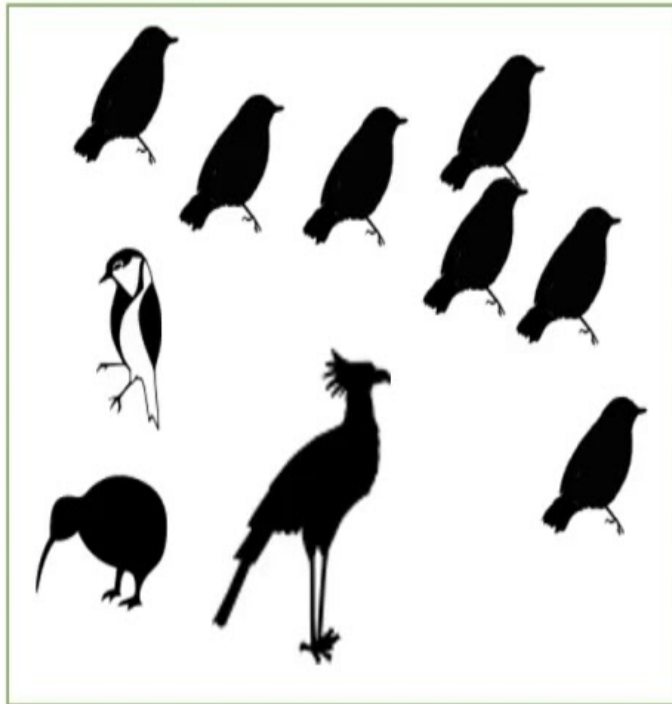
# Species Diversity

- Diversity between different species.
- Species richness of an area.



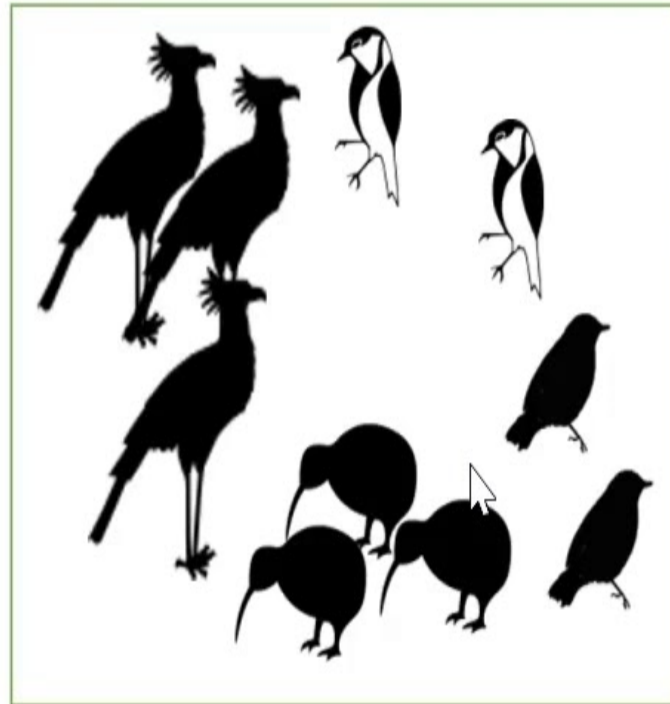
# An Example

Community A



Abundance = 10  
Species Richness = 4  
Diversity = ?

Community B



Abundance = 10  
Species Richness = 4  
Diversity =



# Genetic Diversity

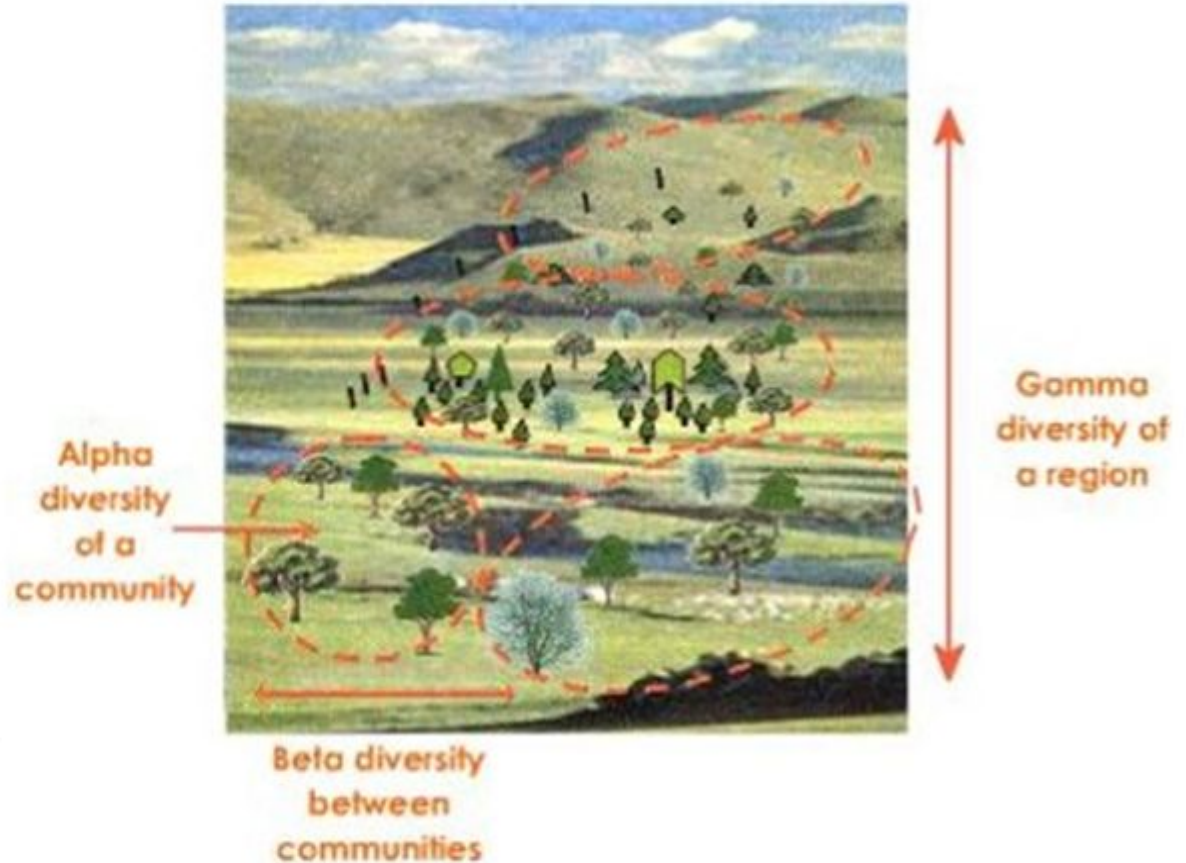
- It refers to various kinds of 'genes' which exists in any one individual species.
- **Diversity in genes** results in diversity in **character** within same species giving rise to **varieties** (Plants) and **races** (Animals).
- **Example:** Many varieties of mango, rice, & wheat and several races of cats and dogs.





# SPECIES DIVERSITY LEVELS

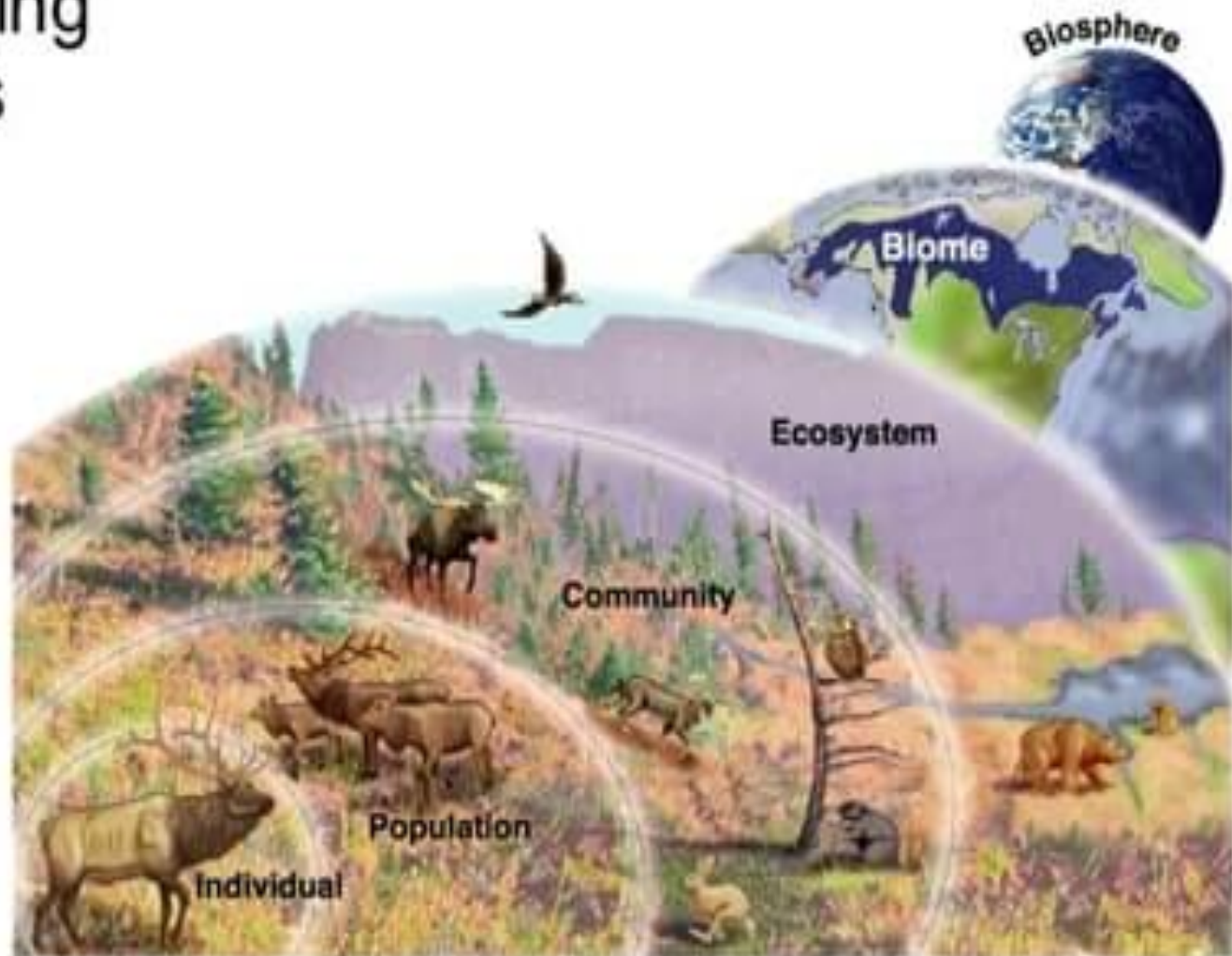
- **ALPHA-**  
**WITHIN**  
**HABITAT**
- **BETA –**  
**BETWEEN**  
**COMMUNITIES**
- **GAMMA – IN A**  
**REGION**



# Levels of Organization

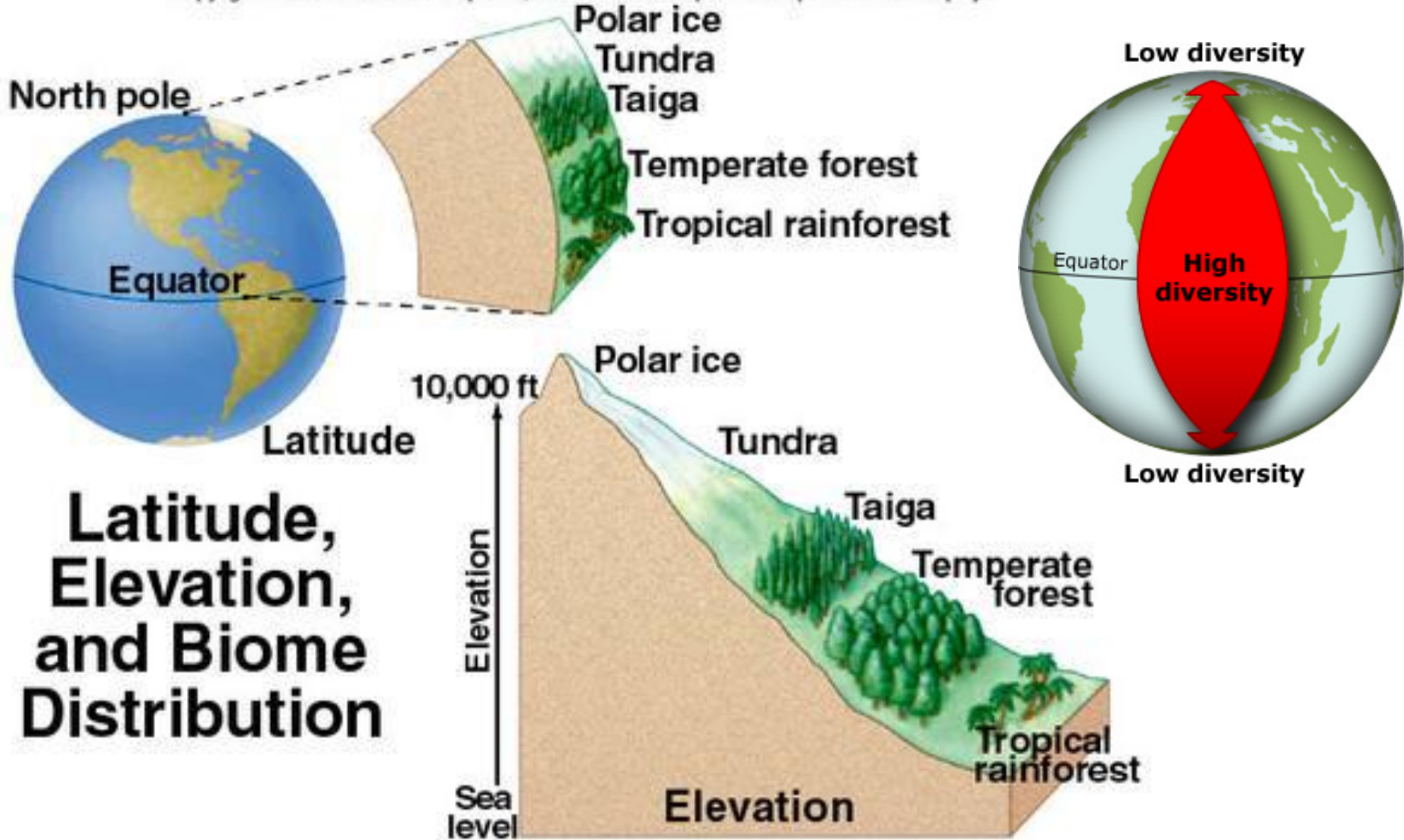
Ecologists study organisms ranging from the various levels of organization:

- **Species**
- **Population**
- **Community**
- **Ecosystem**
- **Biome**
- **Biosphere**



# Biodiversity Gradient

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# Further Readings

- Biodiversity, <https://en.wikipedia.org/wiki/Biodiversity>.
- <https://www.worldwildlife.org/pages/what-is-biodiversity>
- [http://www.biodiv.be/biodiversity/about\\_biodiv/biodiv-what](http://www.biodiv.be/biodiversity/about_biodiv/biodiv-what)



Thank you for attention!!!

# 1. Biodiversity is essential for:

- a) Sustainable living
- b) Maintenance of natural ecosystems
- c) Food security
- d) All of these



## 2. Species diversity example is:

- a) Different varieties of rice
- b) Different breeds of cattle
- c) Diverse ecosystems
- d) Diversity among species

### 3. Alpha diversity means:

- a) Diversity within community
- b) Diversity between communities
- c) Diversity of a region
- d) a & c

## 4. Which is correct order:

- a) Community>Population>Ecosystem>Biome
- b) Population>Community>Biome>Ecosystem
- c) Population>Community>Ecosystem>Biome
- d) Biome>Ecosystem>Population>Community



5. The highest biodiversity is found at:

- a) Greenland
- b) Tropical rain forest
- c) 30<sup>0</sup> North latitude
- d) 30<sup>0</sup> South latitude