

Diversity at Every Level of Life

Exploring the biological organization of our planet.



Defining the Scale of Life

Biodiversity is the term popularised by the sociobiologist Edward Wilson to describe the combined diversity at all the levels of biological organisation—ranging from macromolecules within cells to biomes.

> 20,000

Species of ants

3,000,000

Species of beetles

28,000

Species of fishes

~ 20,000

Species of orchids



Level 1: Genetic Diversity

A single species might show high diversity at the genetic level over its distributional range, altering its physical and chemical properties.

Genetic variation across different Himalayan ranges dictates the potency and concentration of the active chemical produced:
reserpine



Rauwolfia vomitoria



Level 2: Species Diversity

Diversity at the species level focuses on the variety and abundance of distinct organisms living within a given geographic region or ecosystem.

Western Ghats

Significantly greater amphibian species diversity.



Eastern Ghats

Notably lower amphibian species diversity.





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Let's Test Them Now.**

$$E=mc^2$$



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Key Highlights

- » Free Study Material, Videos & Infographics
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- » Get Clear Explanations, Not Just Marks
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Level 3: Ecological Diversity



At the macro level, biodiversity is measured by the sheer variety of massive ecosystems, landscapes, and biomes encapsulated within a territory.

India



Deserts



Rain forests



Mangroves



Coral reefs



Wetlands



Estuaries



Alpine meadows

Norway

(Scandinavian Country)



Pine forest



Tundra

Synthesis: The India Context

Mapping the three levels of biological organization onto a Mega-Diverse nation.

1. Genetic

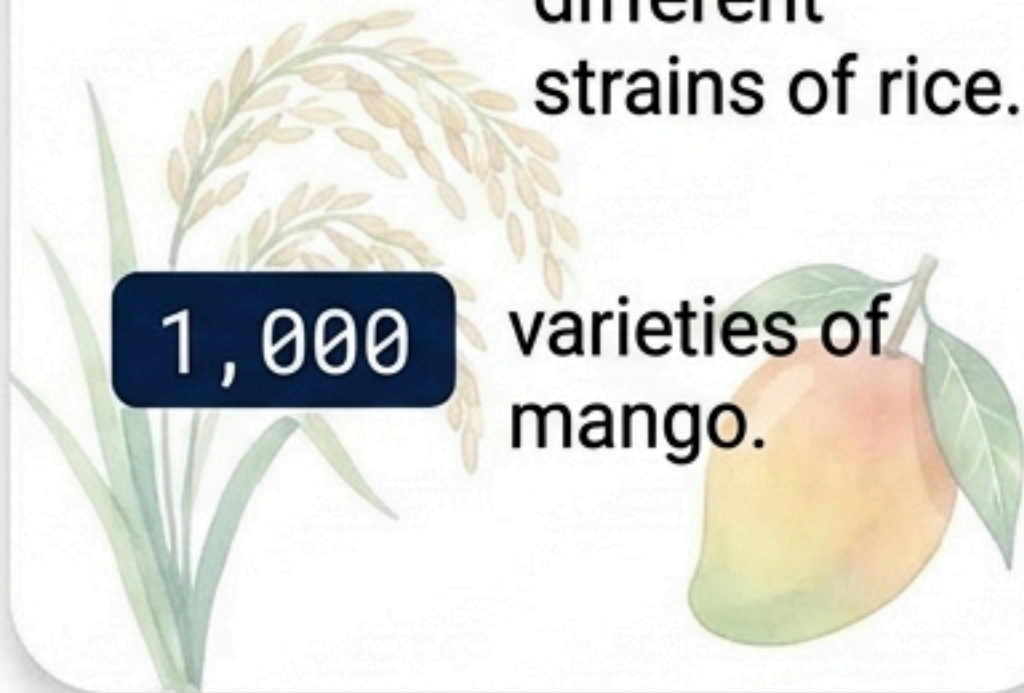
Agricultural Staples

50,000

genetically different strains of rice.

1,000

varieties of mango.



2. Species

Regional Fauna

The Western Ghats hold an exceptionally greater amphibian species diversity than the Eastern Ghats.



3. Ecological

National Biomes

An unmatched geographic range encapsulating deserts, rain forests, mangroves, coral reefs, wetlands, estuaries, and alpine meadows.



The Value and The Threat

THE VALUE

Rich biodiversity is essential for ecosystem health and imperative for the very survival of the human race on this planet.

TIMELINE OF LOSS

It has taken millions of years of evolution to accumulate this rich diversity, but we could lose all that wealth in less than two centuries if present rates of species losses continue.



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