

# ENVIRONMENTAL SCIENCE

## MODULE 2 SEMESTER SIX

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# BIODIVERSITY AND ITS CONSERVATION

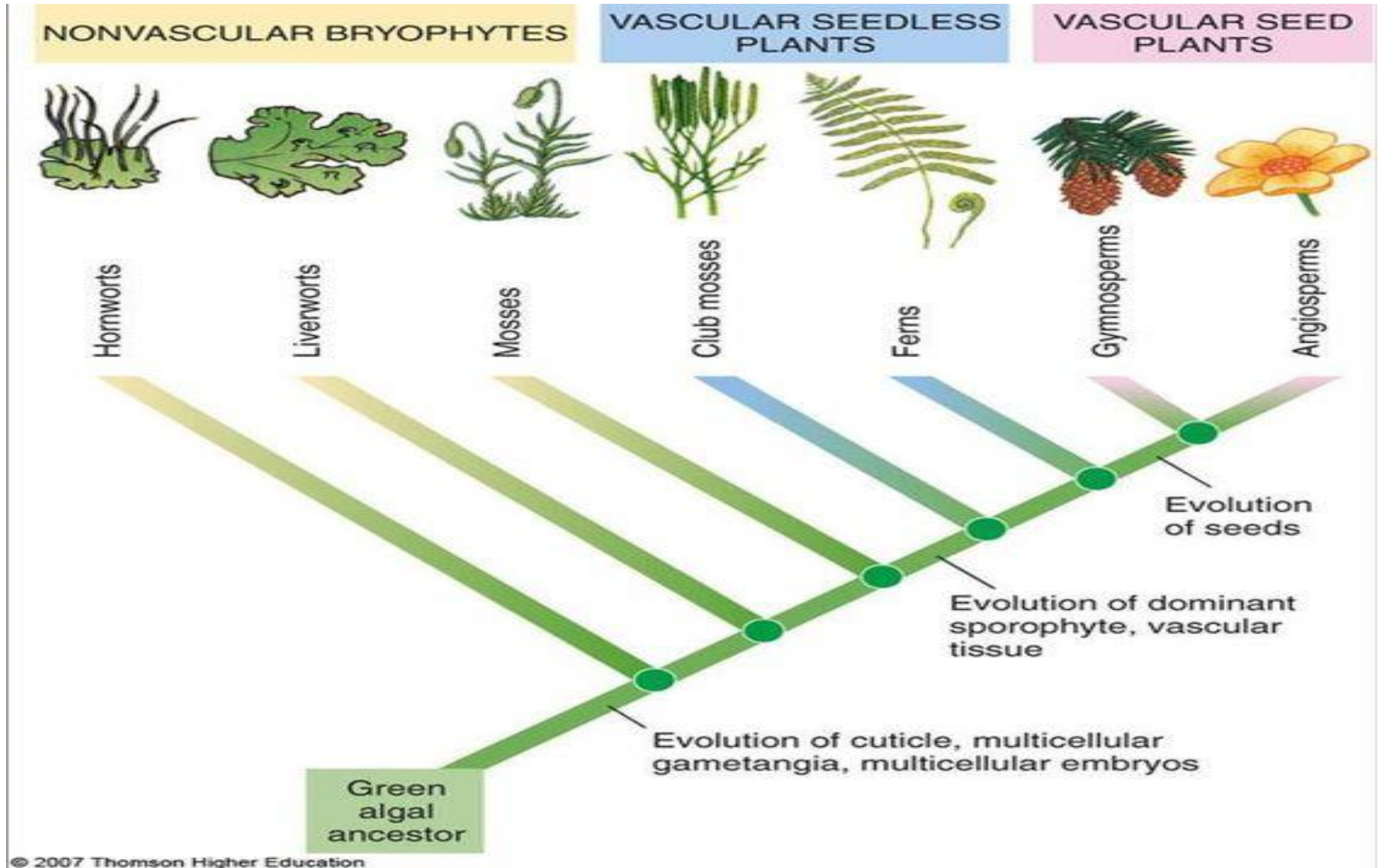
## BIODIVERSITY OR BIOLOGICAL DIVERSITY

Heterogeneity or variability in form, size, structure, functions, mode of life, and behaviour among the biological species of an area, country, continent, or the whole biosphere .





# EVOLUTION OF PLANT FORMS



# COMPONENTS OF BIODIVERSITY

1. Genetic diversity
2. Species diversity
3. Community diversity
4. Ecosystem diversity
5. Landscape diversity

# 1. Genetic diversity



- Diversity of genes within a species
- Result of sexual reproduction, recombination, mutation and environmental influence
- Enable an organism to adopt to a particular environment
- Determine the fitness and survival of an organism

- Serve as the raw material for natural selection and evolution

**Accumulation of variation leads to speciation**

## 2. Species diversity

- Diversity of species in a community
- Higher number of rare of unrelated species higher is the diversity
- High species diversity is found in tropical rain forest and low in deserts



## ❖ Species richness or abundance

- Number of species in an area
- Directly proportional to species diversity
- Varies with communities ,geographical regions and environmental conditions

## ❖ Species evenness

- Uniformity in the distribution of numbers of different species
- It is maximum when all species of a community have same no.of individuals
- Inversely proportional to diversity



Species	Community A	Community B
A	5	11
B	5	25
C	5	30
D	5	2
E	5	14

# 3. Community diversity

- Composition of community with respect to other communities
- Biodiversity in a subset of community is called point community
- Point community is directly proportional to community diversity

# 4.Ecosystem Diversity

- Diversity in the composition of ecosystems
- Depends upon the physical features, climatic conditions and biotic components

# 5. Landscape diversity

- Landscape is a stretch of land with different types of land forms
- Diversity within landscapes in terms of its composition and connectivity of individual ecosystems