

Biodiversity Module 1

1. Biodiversity is the diversity of life in all its forms and at all its level of organisation. (richness of a geographic area)

2. All living organisms in different ecosystems in a region of biosphere.

3. Biological Diversity - Raymond F. Dasmann

4. Father of biodiversity - WG Rosen

5. Mule - male donkey + female horse

6. Hinny - male Horse + female donkey

7. Taxonomy - naming, describing and classifying organisms. (binomial naming is used - GENUS + SPECIES NAME)

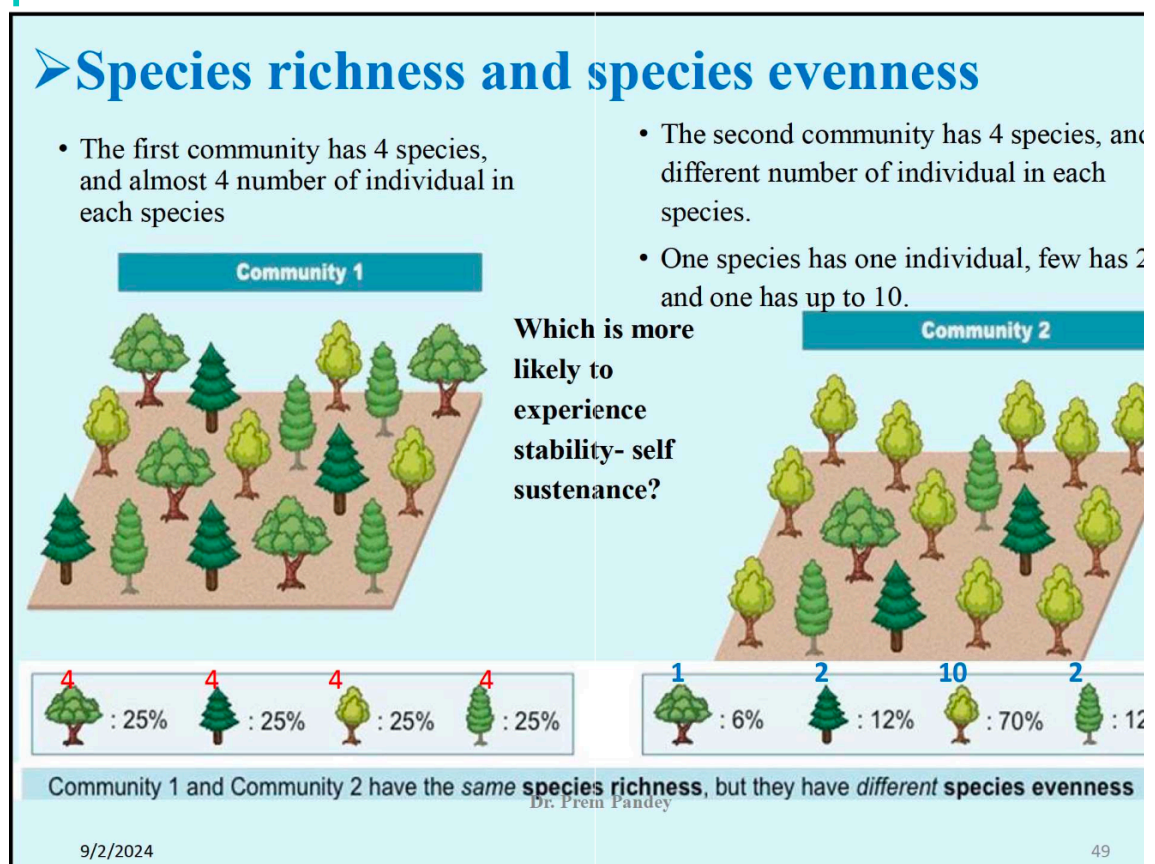
8. Taxonomy Diversity - the number and the relative abundance of species in a community.

9. Functional diversity - a part biodiversity that generally covers

the range of functional traits of organism in an ecosystem.

10. **Morphological Diversity**- variations Physical Appearance
11. **Genetic diversity**-diversity of gene within species
12. Genetic diversity increases the survival rate and adaptability to environment (climate change).
13. A species with more genetic diversity can adapt better to the changed environmental condition.
14. The genetic diversity within a species often increases with environmental variability.
15. Cause of reduction in genetic biodiversity -inbreeding, restricted gene flow, small population size and genetic drift.
16. Speciation-evolution of a new species.
17. Organism diversity-diversity among species in an ecosystem
18. Ecological diversity-diversity of a habitat in a given unit area.

19. 11-13- basic building blocks of diversity
20. **Species Diversity**- variety of species within a region(from plants to animals)
21. Species abundance refers to the number of individuals of each species in an area, while species richness(DIVERSITY INDEX) is the total number of different species present in that area.



- 22.
23. **Relative abundance of species**

$$= \frac{\text{number of individuals of a species}}{\text{total number of}}$$

individuals In ecosystem

24. **Higher species evenness - higher self sustenance**
25. **Loss of species affect an ecosystem as a whole.**
26. **Rhododendron-himalayas and anamudi hill.**
27. **Keystone species**-maintains the structure and integrity of the community.if they are removed the ecosystem collapses. These species play a **unique and crucial role** in the way an ecosystem functions. They have large effects on its environment relative to it abundance.
28. **Ex-KRILL(FEED blue WHALE-LARGEST ANIMAL ON PLANET& nutrients carrier and feed on phytoplankton); BEES; Aligator; elephants**
29. **Concept-Robert T paine**
30. **Their loss can endanger the other species**
31. **A keystone species is an**

organism that helps define an entire ecosystem

32. **ENGINEERS OF AFRICAN SAVANNA-ELEPHANTS.**

33. **Elephants preserve grasslands by eating small trees because grassy trees need sunlight. If they weren't there the savanna would've inverted to a forest. Corridors help prevent spread of wildfire.(they save lives)**

34. **Saguaro cactus**

- Can **soak and store up to 757 liters of water** during a heavy downpour.
- If you ever find yourself stranded in a desert and come across one of these cacti remember they have **life-sustaining water** inside of them.

But that's not why the saguaros are a keystone species.

35. – These cacti offer **nesting opportunities** to many different species of bird, such as red-tailed hawks, gila woodpeckers, purple martins, and elf owls.

36. **Parrot fish-algae growth check ; coral reefs.**

37. **Ecological Biodiversity**-Ecological diversity refers to the variety of ecosystems present in a biosphere.

- **Biogeography** is the study of distribution of species, organism and ecosystems in geographic space and through geological time.

India is termed as "MEGA DIVERSITY COUNTRY".

38. Bio geographic zones were used as a basis for planning wildlife management in protected areas.
39. Ex: trans himalaya, deser,semi arid ,Gangetic plains, coast etc
40. Wow INDia Has Ten Different Geographic Classification Systems
41. Western ghats(SAHYADHIRI HILLS), islands, north east India(51 FORESTS FOUND HERE),desers, Himalaya,trans Himalaya, Deccan plateau, Gangetic plains(THE NORTH INDIAN RIVER PLAIN), coasts, semi arid zones.
42. Himalayas consist of the youngest and loftiest mountain chains in the world.
43. Semi Arid Region-a transitional zone between desserts and denser forest of western ghats. Vegetation-thorn forest.
44. Western ghat(now a UN world heritage sight) are interrupted by only a 30km break-Palghat gaps+shencottah gap+goa gap

45. Western Ghats are also home to special kind of fresh water swamps known as **myristica swamps(wild nutmeg)**

- **Most of the Western Ghats endemic plants are associated with evergreen forests.**
- Summary of Species Outcomes for the Western Ghats

Beyond the Ghats is Deccan Plateau,

- a semi-arid region lying in the rain shadow of the Western Ghats.
- This is the largest unit of the Peninsular Plateau of India.

46. Deccan plateau-DECIDIOUS FORESTS

47. **North East India-Centre of ORIGIN OF Citrus Fruits**

48. Lakshwadeep has one of the four coral reef regions of India.

49. **East Coast**-Wide and Sandy

50. **West Cost**-narrow and rocky

BRYOPHYTES-

Liverworts

- **Non vascular seedless plants-**
- **Means no roots and no vascular tissues**
- **Absorb water from air**
- ***Cryptogams—that reproduces through spores rather than seeds***

- An estuary is a **partially enclosed, coastal water body where freshwater from rivers and streams mixes with salt water from the ocean.**
- Estuaries, and their surrounding lands, are **places of transition** from land to sea.

- A backwater is a **part of a river in which there is little or no current.**

Ferns do not have seeds or flowers they reproduce through spores.

51. **Gymnosperms(naked seeds)-First plant to have seeds and Angiosperms (closed seeds in fruits)**

52. **Coelomates: organisms with a fluid filled cavity. Between the gut wall and the outer body wall.**

53. Humans are deuterostomes.

54. **ENDEMIC SPECIES:** remain confined

to a particular locality(**particular habitat**) due to some reason such as the habitat that is favourable for their development and survival.

- 55. Endemic species are more vulnerable than other species.
- 56. Reasons: poor in adaptation to different type of environmental conditions; geographical barriers like sea and mountains; less efficient seeds so can't go of to far places.
- 57. **Bali Mynah:most critically endangered bird**
- 58. Largest endemic species are found in southern west ghats and eastern himalyas
- 59. **Dipterocarp trees:**hod greatest insect diversity
- 60. Largest flower in the world:**Rafflesia**

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