

Ecology

The term ecology - German biologist **Ernst Haeckel**.
Greek words, 'oikos', -> home or estate + 'logos' meaning study

Levels in Ecology -

Study of Levels of ecological organization	1. Organisms (individual) basic unit of study	2. Population A group of organisms consisting of a number of different populations that live in defined area and interact with each other.	3. Community A group of organisms consisting of a number of different species that live in an area and interact with each other	4. Ecosystem A communities of organisms and their physical environment, interacting as an ecological unit.
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A large community unit, characterized by a major vegetation type and associated fauna, found in a specific climatic region is a **biome**

Habitat -

Habitat is the physical environment - 'address'
Multiple organisms - share same habitat

Niche

Functional characteristics of a species in Habitat

Profession - activities and responsibilities

Same niche - for two species - **Not possible, if same -> Competition**

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- **Niche elements -**
 - **Animals** - Food + Shelter
 - **Plants** - moisture + Nutrients

Species -

Similar genetic makeup + interbreeding = fertile offsprings

1. Keystone species

Disproportionately large effect on Ecosystem
Disappearance -> impacts whole Ecosystem
Eg . - Top predators, elephants, corals, insects and bees etc

2. Indicator species -

Presence, abundance or absence - indicates certain environmental conditions
Sensitive to envt. → **sentinel species**
Eg. - frog - Freshwater conditions

Lichen - acid rain

Top predators

3. **Endemic species -**

Found only in an specific area -> not anywhere else

Eg - lion tailed macaque - nilgiri

Nilgiri tahr

4. **Invasive alien species**

Species entering in non native area - intentionally or unintentionally

Faster propagation → no natural predator

Invasive → Colonize the area

Eg. Lantana camara, prosopis juliflora, congress Grass etc

Note - IUCN maintains **Global Invasive Species database**

- **Second most common threat** associated with species that have **gone completely extinct since 1500**. (A 2016 study published in the journal **Biological Letter**)

5. **Flagship species -**

Celebrity of region

Eg - MP tigers

Used in advertisements

6. **Umbrella species** - important from conservation point of view

Conservation of one umbrella species → may be beneficial for others species too