

BALU PUBLICATIONS

**For
Civil Services**

Short Notes

Environmental studies

Rs:50/-

Environment Articles To Prepare For Civil Services Online

Section 1 : Ecology & Eco – Diversity >> Basics of Environment studies

- [Ecology, Biome, Ecotone, Niche, Ecosystem, Biosphere](#)
- [Ecological Succession, Food Chain, Food Web, Ecological pyramids](#)
- [Biogeochemical Cycles: Water Cycle, Carbon Cycle, Nitrogen Cycle](#)
- [Environment Pollution – Air Pollutants](#)
- [Environment Pollution – Water Pollutants](#)
- [Electronic waste major pollutants](#)
- [Bioaccumulation vs Bioconcentration vs Biomagnification + Composting + Vermiculture](#)
- [Greenhouse Effect & Greenhouse Gases](#)
- [Acid Rain & Ozone Depleting Substances](#)
- [Ocean Acidification & Salt Marsh Ecosystem](#)

Section 2 : Biodiversity Conservation, Geoengineering, Species, Plants, Forest & Aquatic Ecosystems

- [Carbon Sources & Sequestration](#)
- [Geoengineering](#)
- [Environmental Impact Assessment + Agriculture Techniques & Revolutions](#)
- [Biodiversity and Biodiversity Hotspots](#)
- [Biodiversity Conservation](#)
- [Different types of Species](#)
- [Biofertilizers and Green Manure](#)
- [Forest Ecosystem](#)
- [Aquatic Ecosystems & Eutrophication](#)
- [Wetlands, Ramsar Convention, Montreux Record, Estuaries](#)
- [Mangroves and Coral Reefs](#)
- [Plant Classification & Parts of Tree](#)
- [Types of Roots & Insectivorous Plants](#)
- [Effect of abiotic components on plants](#)

Ecology, Biome, Ecotone, Niche, Ecosystem, Biosphere

Ecology

Ecology may be defined as the scientific study of the relationship of living organisms with each other and with their environment

The emphasis is on relationships between organisms and the components of the environment namely abiotic (non-living) and biotic (living).

Ecology is derived from 2 Greek words

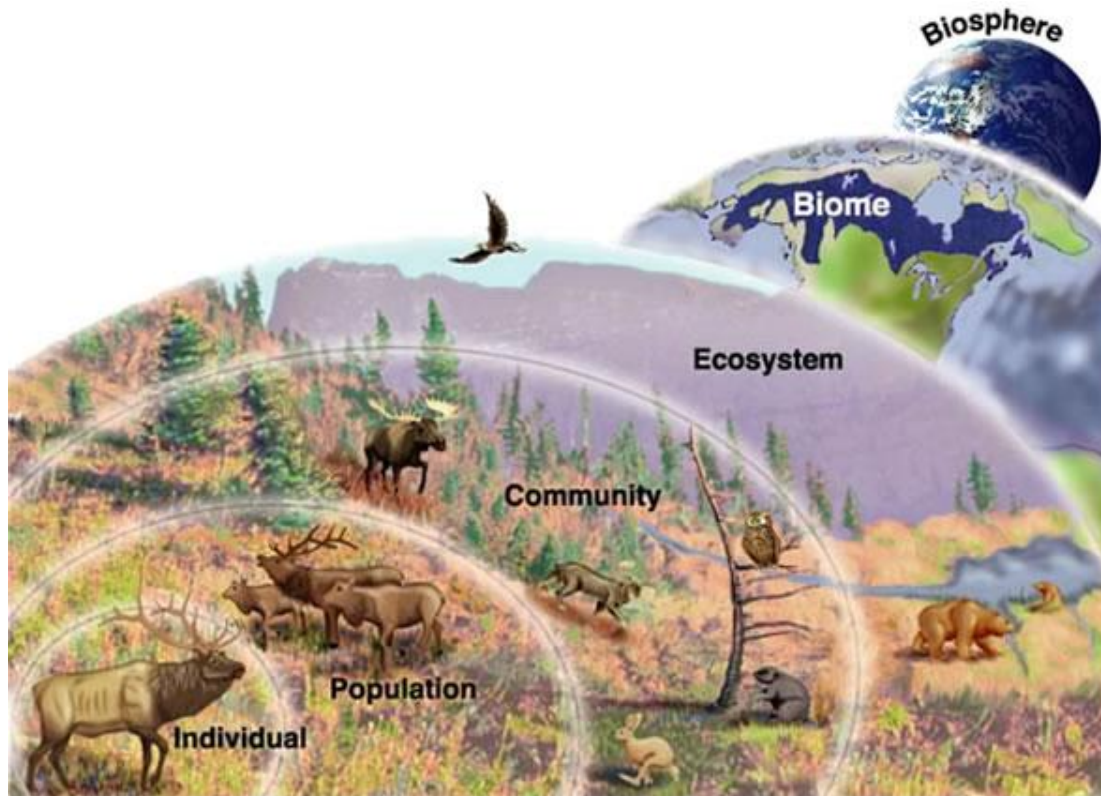
- **Oikos** >> Home or place to live in
- **Logos** >> Study

Literally, it means study of home or nature

Ecology not only deals with the study of the relationship of individual organisms with their environment, but also with the study of populations, communities, ecosystems, biomes and biosphere as a whole

Biome

- a large community unit, characterized by a major vegetation type and associated fauna, found in a specific climatic region
- No 2 biomes are alike



Ecotone

- Transitional area between two biomes or diverse ecosystems (where two communities meet & integrate)
- Examples : between a field and forest, between forest and grassland
- may appear as a gradual blending of the two communities across a broad area, or may manifest itself as a sharp boundary line
- May contains some organisms which are entirely different from that of adjoining communities
- Sometimes the number of species & population density of some of the species is much greater in this zone than either community, Known as **edge effect**
- Organisms which occur primarily or most abundantly in this zone are known as **edge species**

Niche

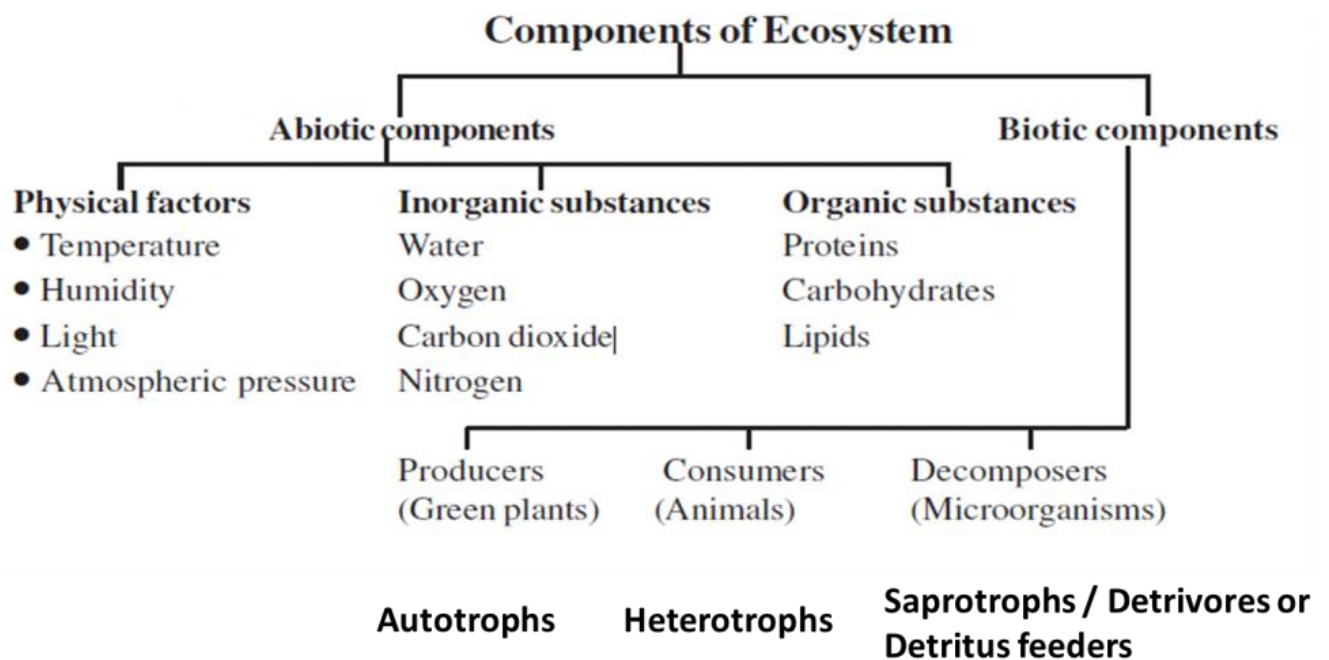
- Description of all the biological, physical & chemical factors that a species needs – to survive, stay healthy & reproduce
- Niche is unique for every species which means no 2 species can have exact identical niche

Ecosystem

A functional unit of nature encompassing complex interaction between its biotic (living) and abiotic (non-living) components. For example- a pond is a good example of ecosystem; (it can also be as small as a single tree)

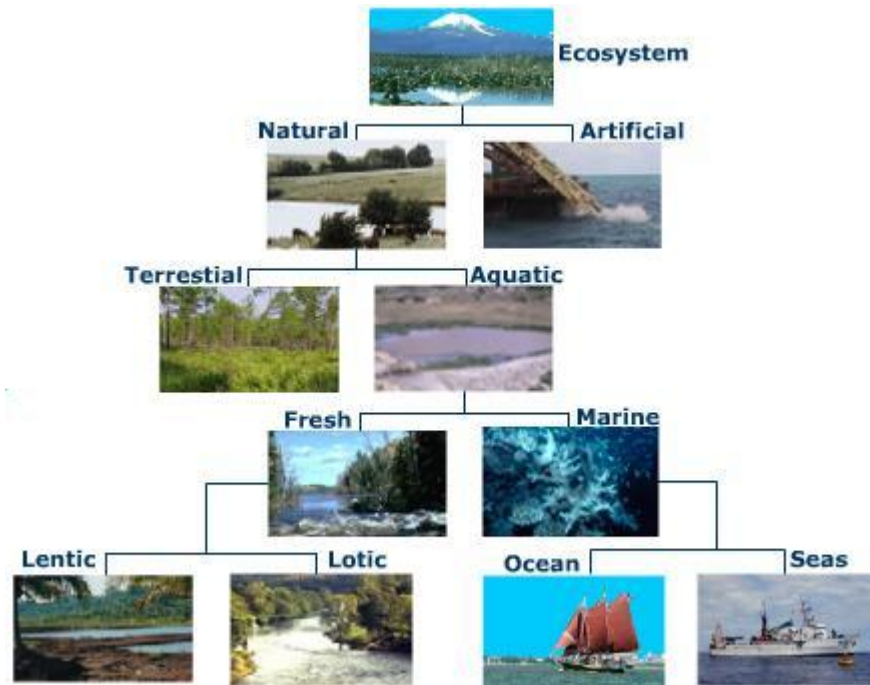
Components of ecosystem: They are broadly grouped into:-

- Abiotic
- Biotic components



Natural ecosystems - Ecosystems dependent on solar radiation & energy subsidies (alternative sources) such as wind, rain and tides E.g. tropical rain forests, tidal estuaries and coral reefs

Man-made ecosystems – Dependent on solar energy + Dependent on fossil fuel



Lotic (Moving water) — Lentic (Stagnant water)

Biosphere

- Represents a highly integrated & interacting zone comprising of atmosphere, hydrosphere & lithosphere
- abundant life between 200 meters below oceans surfaces till approx. 6000 meters above sea surfaces
- absent at extremes of north & south poles, the highest mountains & at the deepest oceans majorly due to hostile conditions
- Occasionally spores of fungi & bacteria do occur at great height beyond 8000 meters but they are not metabolically active & hence represent only dormant life

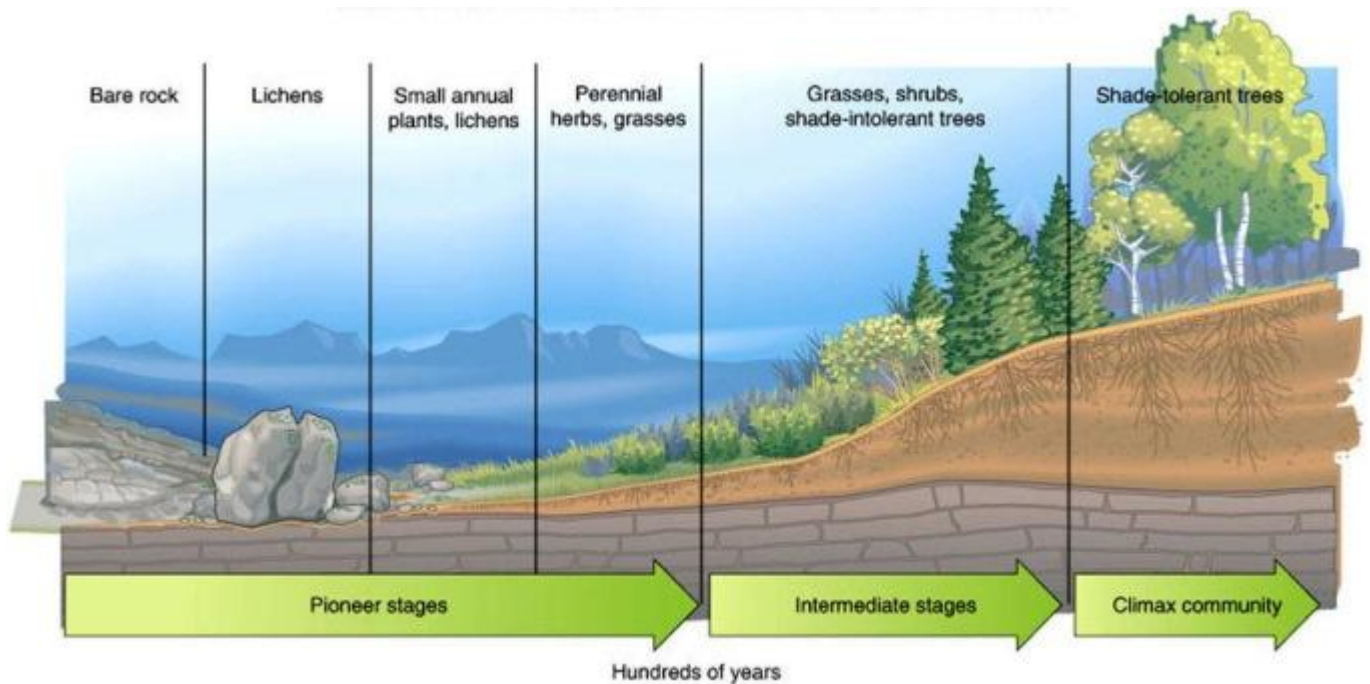
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Ecological Succession, Food Chain, Food Web, Ecological pyramids

Ecological Succession

Primary succession

- From a pioneer community (initiation) to a climax community (Final)
- Rare & takes a long time to generate



Secondary succession

- Development of a community which forms after the existing natural vegetation that constitutes a community is removed, disturbed or destroyed by a natural event like hurricane or forest fire or by human related events like tilling or harvesting land.
- A secondary succession is relatively fast as, the soil has the necessary nutrients as well as a large pool of seeds and other dormant stages of organisms.

End of Preview.

Rest of the book can be read @

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