4 Ecosystems and Energy Flow

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Zonation in wetlands

Wetland consistents are often found at the interface und terrestrial aquatic expressions These systems are very sensitive changes environmental conditions



Graphical

ecosystem.

ecosystem.

Always upright.

Mostly upright.

Quick Review

Decomposition

- Breakdown of complex organic compounds simpler inorganic substances that can be reused by plants for their growth.
- Steps Fragmentation, Leaching, Catabolism. Humification Mineralization.

Ecological Pyramids

representation

biomass or energy) at different trophic

Pyramid of Number

Graphic representation of arrangement

of number of individuals of different

trophic levels in a food chain in an

Pyramid of Biomass

· Graphic representation of amount of

· Upright in terrestrial habitat, but

Pyramid of Energy

Graphic representation of amount of

energy trapped per unit area and time

at different trophic levels in an

inverted in aquatic ecosystem.

biomass per unit area at different trophic

levels in a food chain in an ecosystem.

ecological parameter (number/

Zonation

Density and distribution of species varies along a horizontal gradient.

Stratification

Distribution takes place vertically and is determined by height of organisms.

Patterns

ECOSYSTEM

Biotic community + Abiotic components and interactions among them.

Ecological Succession

It is the gradual and predictable change in the species composition of a given area.

Primary Succession

- It starts in the area where no living organism ever existed.
- Starts in areas like bare rock, newly formed pond, etc.
- Very slow process.

Secondary Succession

- Starts in the area which has lost all living organisms that once existed.
- Starts areas like abandoned farm. burnt forest, etc.
- Relatively faster process.

Hydrarch

Takes place in areas where water is in abundance.

Xerarch

Occurs in desert areas.

Productivity

Amount of organic matter produced per unit area in unit time

- Primary Productivity. (Gross, Net)
- Secondary Productivity
- Net Productivity

Ecological Services

Services provided by the environment for the benefit of mankind.

- COs fixation. Release of Os
- Pollination

Energy flow and Nutrient cycle

- Energy flow is unidirectional.
- Only 10% energy is passed from trophic level to another.
- Nutrient cycling is the storage transfer of nutrients through bioti abiotic components of the ecosyster

Pioneer Community

It represents the assemblage of species which invade a bare area and in succession.

Seral Community (Intermediate stages)

- It includes the different communities w replace one another during succession.
- Different communities are represented mosses, lichens, herbaceous shrubs, small trees, etc.

Climax Community

- It is the community which established at the terminal stage
- It is near equilibrium with environment, hence stable.