

DURGA

MAHAVIDYALAYA

ENVIRONMENTAL STUDIES

PRESENTED BY

BHAVNATHAKUR

(ASSISTANT PROFESSOR)

Environmental Studies:

Environmental studies is an interdisciplinary field that examines the relationships between humans and the natural environment. It includes aspects of ecology, biology, chemistry, geography, sociology, economics, and policy.

Spheres of the Environment:

The environment can be divided into four major spheres:

1. *Lithosphere*: The solid part of the Earth (land, rocks, soil).
2. *Hydrosphere*: Water in all forms (oceans, rivers, lakes, groundwater).
3. *Atmosphere*: The layer of gases

surrounding the Earth (air).

4. *Biosphere*: All living organisms and their interactions with the other spheres.

Interconnectedness:

These spheres interact and influence each other, shaping ecosystems and impacting environmental health.

Importance of Environmental Studies:

Environmental studies is crucial for understanding the impact of human activities on the natural world and for promoting sustainability. Key importance includes:

1. *Understanding human-environment interactions*: Recognizing how human actions affect the environment and vice versa.

2. *Promoting sustainability*: Encouraging practices that balance human needs with

environmental protection.

3. *Addressing environmental challenges*:

Tackling issues like climate change, pollution, deforestation, and biodiversity loss.

4. *Informing policy and decision-making*:

Providing knowledge for effective environmental management and policy formulation.

5. *Raising awareness and responsibility*:

Educating individuals about their environmental footprint and encouraging responsible behavior.

Outcomes:

Environmental studies help in achieving a balance between development and environmental protection, ensuring a healthier planet for future generations.

Biotic Components:

Biotic components are living organisms in an ecosystem. They include:

1. *Producers (Autotrophs)*: Plants, algae, and some bacteria that produce their own food through photosynthesis.
2. *Consumers (Heterotrophs)*: Animals that consume other organisms for energy.
3. *Decomposers*: Microorganisms like bacteria and fungi that break down dead organic matter.

Abiotic Components:

Abiotic components are non-living factors in an ecosystem. They include:

1. *Physical factors*:
 - Temperature
 - Light
 - Water
 - Air

- Soil

2. *Chemical factors*:

- Nutrients (like nitrogen, phosphorus)
- pH
- Salinity

Food Cycle in Environment:

The food cycle, also known as the food web or food chain, describes the flow of energy and nutrients through ecosystems via the feeding relationships between organisms.

Key components of the food cycle:

1. *Producers* (plants, algae): Convert sunlight into energy via photosynthesis.

2. *Consumers*:

- *Primary consumers* (herbivores): Eat producers.

- *Secondary consumers* (carnivores): Eat primary consumers.

- *Tertiary consumers*: Eat secondary

consumers.

3. *Decomposers* (bacteria, fungi): Break down dead organisms, recycling nutrients.

Importance of the food cycle:

1. *Energy flow*: Energy moves through ecosystems via feeding relationships.

2. *Nutrient cycling*: Nutrients are recycled back into the environment.

3. *Ecosystem balance*: Food cycles help maintain balance in ecosystems.

Human impact on food cycles:

Human activities like overfishing, deforestation, and pollution can disrupt food cycles and ecosystem balance.