

**LESSON NOTES****School: Ba Sangam College**
Subject: Geography**Year/Level: 13**
Week 8**Name:**
Year:

Strand	Physical Geography
Sub Strand	Soils
Content Learning Outcome	Explore the importance of soil, its management and sustainability

Chapter 4 : Soils

Soil is one of the most important natural resources that perform many functions essential for maintenance of ecosystem, especially forests.

At the end of this chapter, students should be able to:

- research and present the importance of soil
- identify how soil is degraded
- highlight soil conservation measures
- describe the impact of climate change on soil

Soil Ecology

Is the study of how soil organisms interact with each other and their environment- their influence on and response to numerous soil processes and properties form the basis for delivering essential ecosystem services.

The stored nutrients are released and returned to the soil ready for future use known as **nutrient** or **humus cycle**. The nutrients are good for plant growth and maintains the fertility of the soil.

Hydraulic Conductivity

Is a measure of how quickly water can pass through soil or rock.

Soil degradation is defined as a change in the soil health status resulting in a diminished capacity of the ecosystem to provide goods and services for its beneficiaries.

Soil degradation is the physical, chemical and biological decline in soil quality.

Soil degradation can involve:

- water erosion (includes sheet, rill and gully erosion)
- wind erosion
- salinity (includes dry land, irrigation and urban salinity)
- loss of organic matter
- fertility decline
- soil acidity or alkalinity
- structure decline (includes soil compaction and surface sealing)
- mass movement
- soil contamination (including effects of toxic chemicals and pollutants).

Causes of Erosion

- ✓ Exposing soil on slopes
- ✓ Removal of forest vegetation
- ✓ Overgrazing
- ✓ Altering the characteristics of streams causing bank erosion
- ✓ Poor agricultural practices.

Consequence - This has resulted in the loss of productive soil from crop and grazing land.

• **Shifting Cultivation**

- It is a type of cultivation practiced mainly in North-Eastern states of India
- It is a type of slash and burn method of cultivation.
- After reaping the crops, the land (usually the forest) is slashed and burned.
- The next cultivation will be in another plot and the burned land will let uncultivated for a period of time.

Consequence - This causes major deforestation, environmental pollution, loss of habitat for wild animals. The burning of forest results in soil erosion and gradual degradation of soil

• **Soil Acidification** - Soil acidification is the increase in the ratio of hydrogen ions in comparison to 'basic' ions within the soil.

The pH of a soil can have major effects on plant growth, as various nutrients become unavailable for plant use at different pH levels

• **Salinity**

- Soil will become saline or alkaline in low rainfall areas eg. Rajasthan
- When the sea water enters the land, the soil becomes saline.
- The presence of calcium carbonate beneath the soil will act as impermeable to water and water gets logged as happened in Indira Gandhi canal regions of Rajasthan.

Short-Answer Questions

1. Describe one human activity that can accelerate soil erosion.

----- (2 marks)

2. Differentiate between soil acidity and soil salinity.

----- (2 marks)

3. Explain how overgrazing and desertification can affect soils.

----- (2 marks)