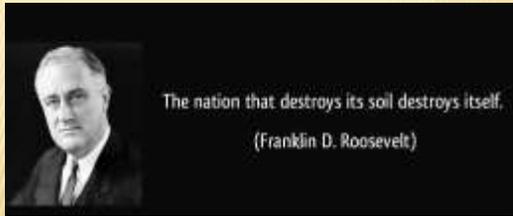


SOIL



Ecology

QUESTION OF THE DAY

- ✗ TRUE or FALSE?
 1. Many commonly used antibiotics come from microorganisms found in the soil.
 2. There are roughly one million microorganisms living in each spoonful of soil.
 3. There are 70,000 different types of soil.
 4. It takes 50 years to form one inch of topsoil.



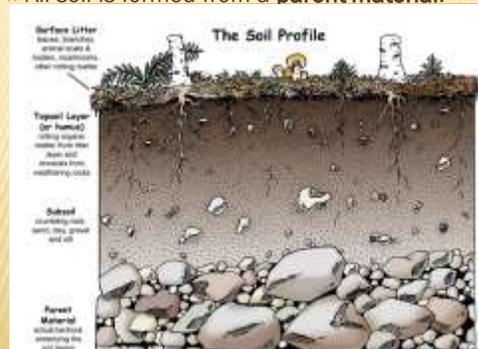
SOIL CHARACTERISTICS

- ✗ 70,000+ different types of soil
- ✗ Categorized by:
 - + Texture
 - + Nutrient-holding ability
 - + Water-holding ability
 - + pH
 - + And more...



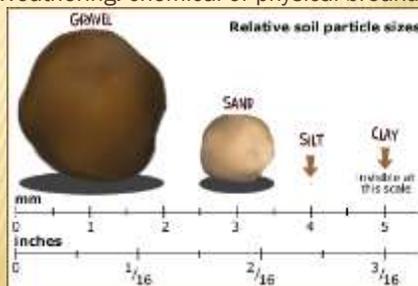
SOIL TEXTURE: PARENT MATERIAL

- ✗ All soil is formed from a parent material.



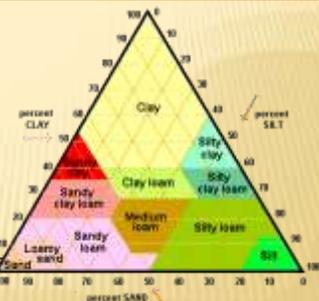
SOIL TEXTURE: PARTICLE SIZE

- ✗ Fragment size: classified as sand, silt, or clay
- ✗ Weathering: chemical or physical breakdown



SOIL TEXTURE: PROPORTIONS

- ✗ Soil is often a combination of sand, silt and clay
- ✗ Can be mostly clay, mostly silt, or mostly sand
- ✗ 40% sand, 40% silt, and 20% clay = loam



Loam containing organic material is considered ideal for food production.

SOIL TEXTURE: PROPERTIES

- ✗ Soil is influenced by its texture:
 - + Larger particles have bigger spaces between them
 - + Smaller particles have more surface area
 - ✗ Nutrients and water cling to surfaces



LOAM

- ✗ Ideal for plant growth and food production
 - + Spaces large enough for air and water to flow in
 - + Small enough particles to hold nutrients
 - + Enough clay to stick together and hold organic material



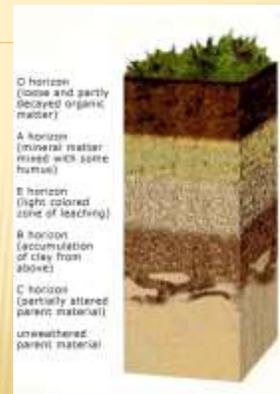
SOIL PROFILE

- ✗ Soil formation creates horizontal "layers" of soil.



IDEAL SOIL PROFILE

- ✗ The "ideal" soil profile has five horizons:
- ✗ **O: Dead organic matter, humus**
- ✗ **A: Topsoil (mineral matter mixed with humus)**
- ✗ **E: Eluviation/leaching zone - minerals lost**
- ✗ **B: Deposited minerals/clay**
- ✗ **C: Partially weathered rock**
- ✗ **HUMUS:** fully broken down organic material
- ✗ **LEACHING:** dissolving of minerals due to water



DIFFERENCES IN SOIL PROFILES

