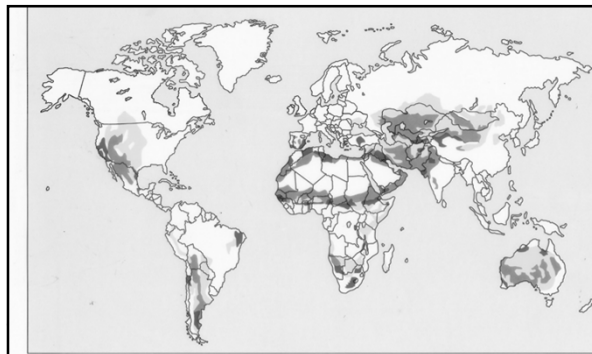


WHAT IS IN SOIL?

“THE NATION THAT DESTROYS THE SOIL DESTROYS ITSELF”

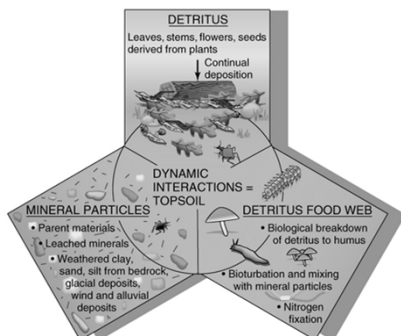
FRANKLIN D. ROOSEVELT 1937



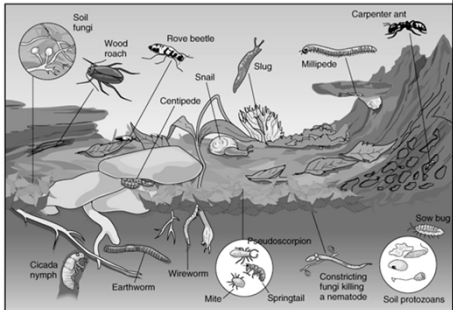
(Data from UN Environment Programme and Harold E. Drengue)

Desertification of arid and semiarid lands

Topsoil Formation is the interaction of three different categories



Detritus Food Web



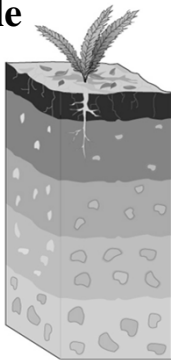
Detritus- when partially decomposed it becomes **humus**



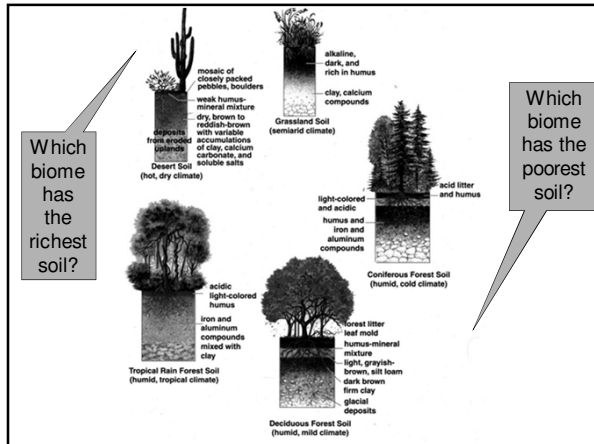
Soil Profile

Soil formation creates gradients

Each profile varies due to climate and minerals

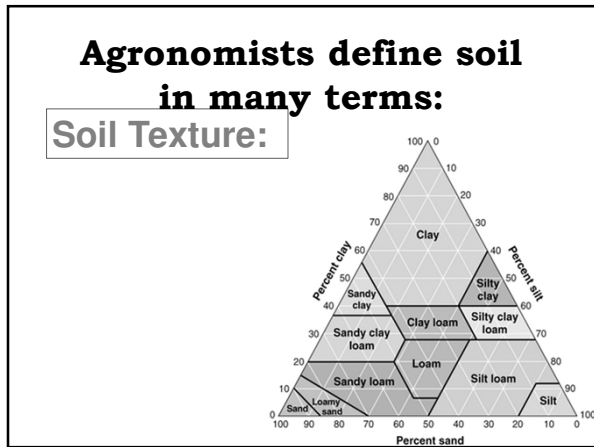


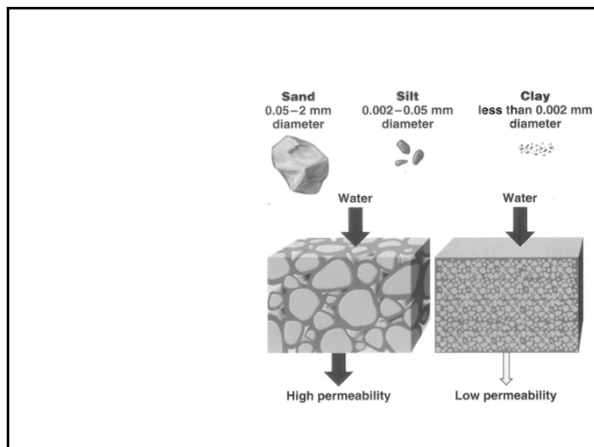
- O Horizon:** Humus. (Surface litter; decomposing plant matter)
- A Horizon:** Topsoil. (Mixed humus and leached mineral soil)
- E Horizon:** Zone of leaching. (less humus, minerals resistant to leaching)
- B Horizon:** Subsoil. (accumulation of leached minerals like iron and aluminum oxides)
- C Horizon:** Weathered parent material. (partly broken-down minerals)



Which biome has the richest soil?

Which biome has the poorest soil?





Agronomists Terms

©Water infiltration-permeability

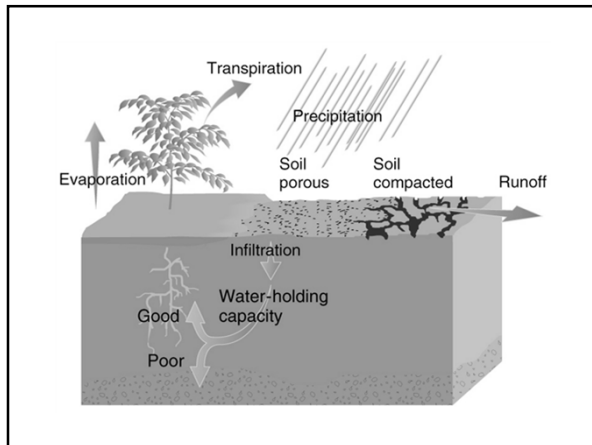


Table 8-2 Relationship Between Soil Texture and Soil Properties

Soil Texture	Water Infiltration	Water-Holding Capacity	Nutrient-Holding Capacity	Aeration	Workability
Sand	Good	Poor	Poor	Good	Good
Silt	Medium	Medium	Medium	Medium	Medium
Clay	Poor	Good	Good	Poor	Poor
Loam	Medium	Medium	Medium	Medium	Medium

ESSENTIAL PLANT NUTRIENTS

NITROGEN

PHOSPHORUS

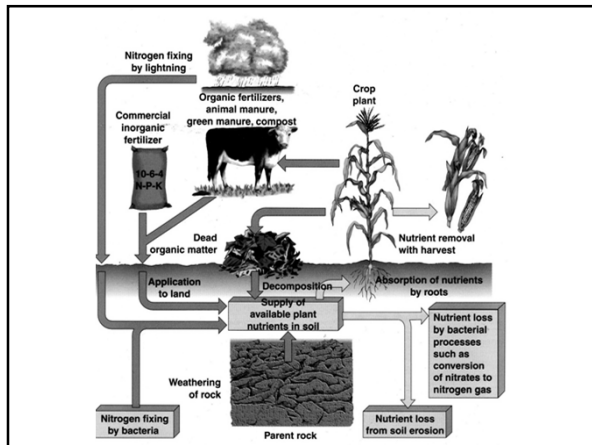
POTASSIUM

THREE NUMBERS OF A FERTILIZER

15:15:15

20:4:2

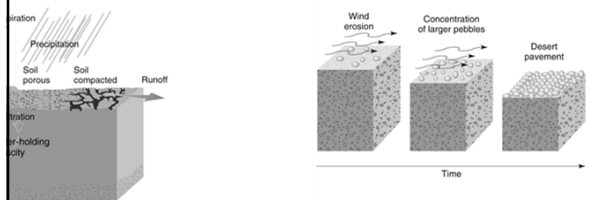
5:20:20



Soil Erosion

Water

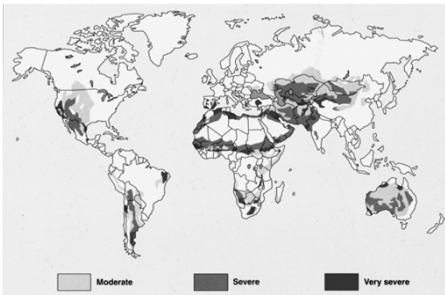
Wind



**SOIL EROSION RATE IS
UP TO 100 TIMES FASTER
THAN THE RENEWAL
RATE**

Soil Degradation

☛ Desertification



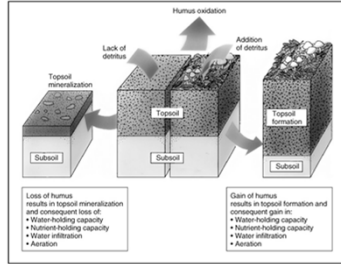
Soil Degradation

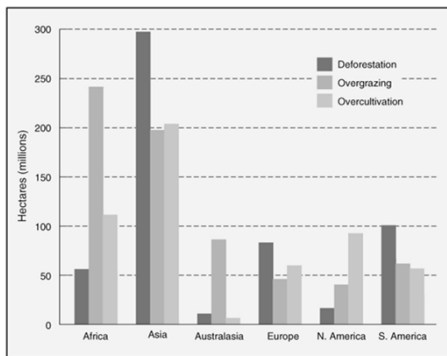
- ☛ Over cultivation
- ☛ Overgrazing
- ☛ Deforestation



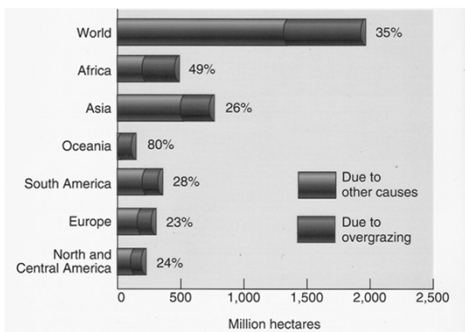
Soil Degradation

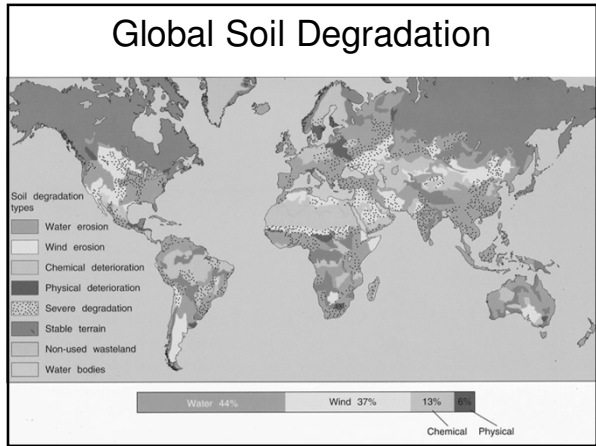
- ☼ Irrigation
- ☼ Salinization
- ☼ Mineralization

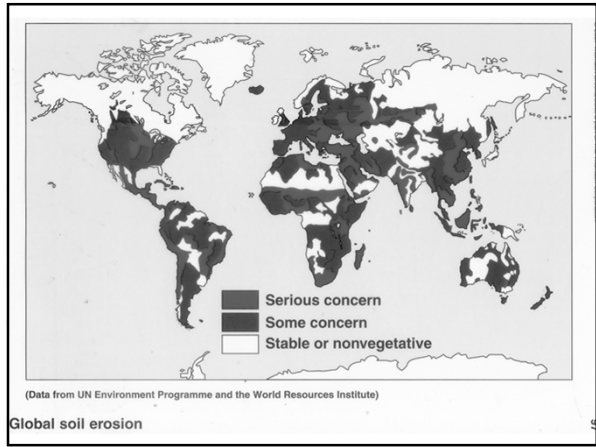




Soil Loss worldwide







Soil Conservation Practice: Reduce soil erosion restore fertility

Terracing

Contour farming

Gully reclamation

Wind breaks

Not pictured:
Agroforestry & Conservation Tillage
