

Soils



Soil Forming Factors

Parent Material

Climate

Precipitation

Temperature

Biota

Topography

Time

Soil Forming Factors

Parent Material

What the soil is made from will determine what kind of soil it becomes and what kinds of minerals the soil contains.

Soil Forming Factors

Climate

Precipitation

- water erosion
- humid areas... more leaching
- more moisture encourages vegetation ... leads to greater organic matter

Soil Forming Factors

Climate

Temperature

- warmer areas have more erosion
- decomposition happens faster in warmer areas... leads to more organic material

Soil Forming Factors

Biota

Microorganisms help decompose organic material.

Burrowing animals effect soil horizons

Soil Forming Factors

Topography

Steep hills vs. slopes

Depressions in the soil

Hill direction

Soil Forming Factors

Time

All soil development requires time... the amount of time depends on the other soil forming factors.

Soil Organisms

Worms



Soil Organisms

Mites



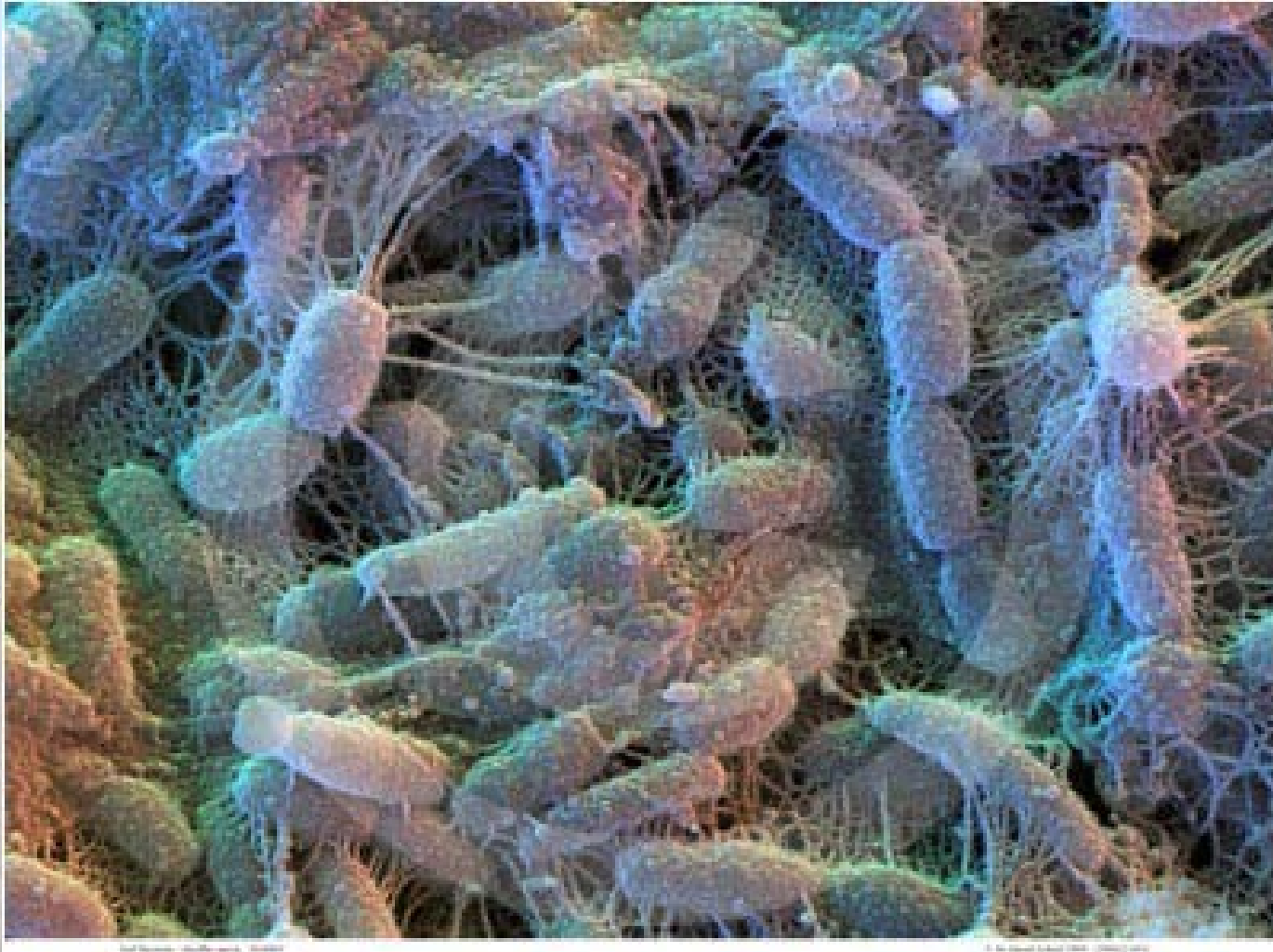
Soil Organisms

Centipedes & Millipedes



Soil Organisms

Bacteria



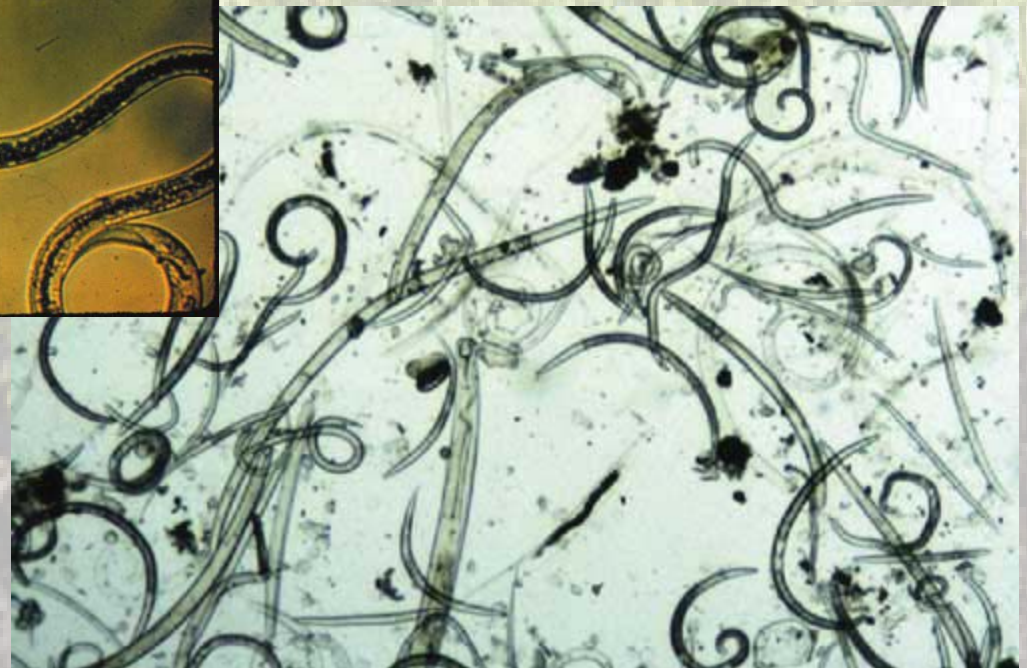
Soil Organisms

Spiders



Soil Organisms

Nematodes



Soil Organisms

Slug and Snails



Soil Organisms

Other Animals



Soil Layers

6 layers:

O

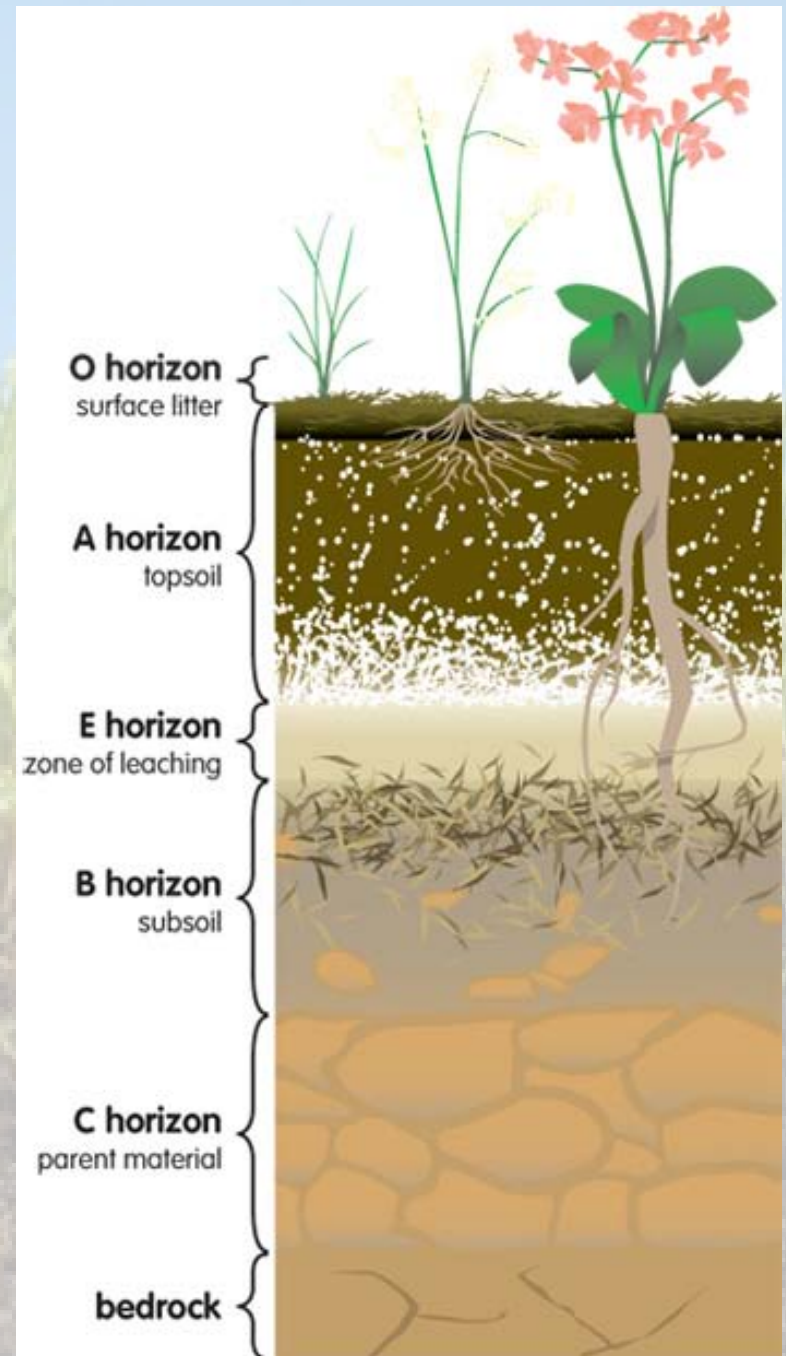
A

E

B

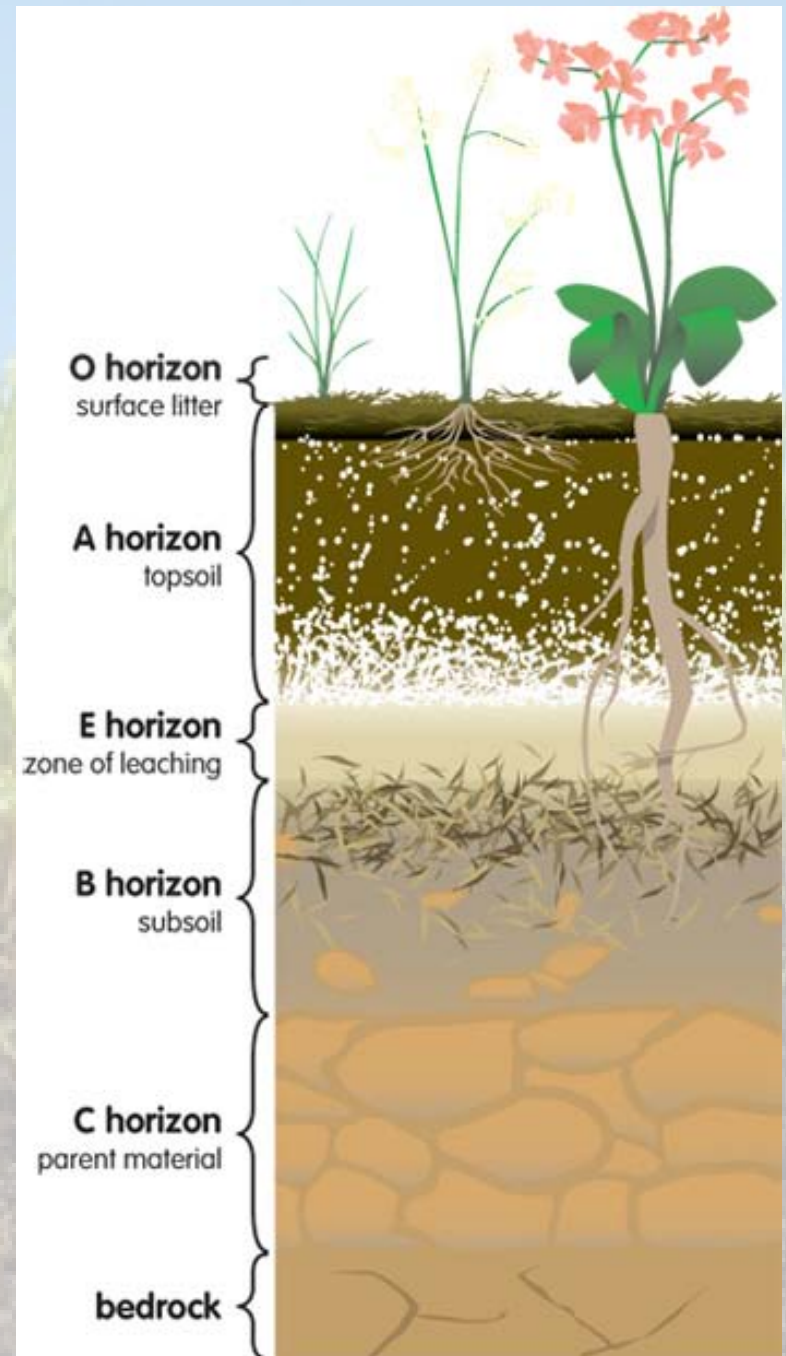
C

bedrock



Soil Layers

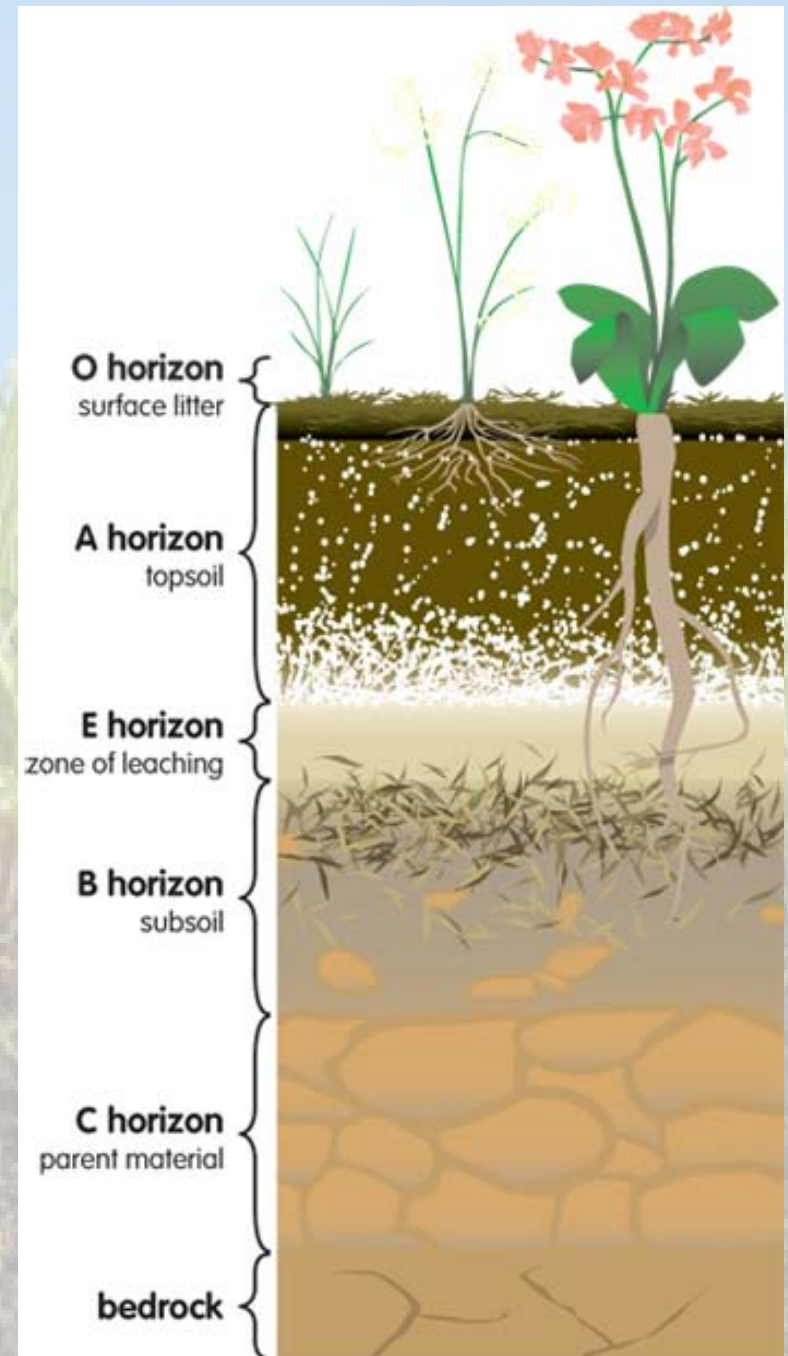
O) Organic matter
Litter layer of plant residues in relatively un-decomposed form.



Soil Layers

A) Surface soil

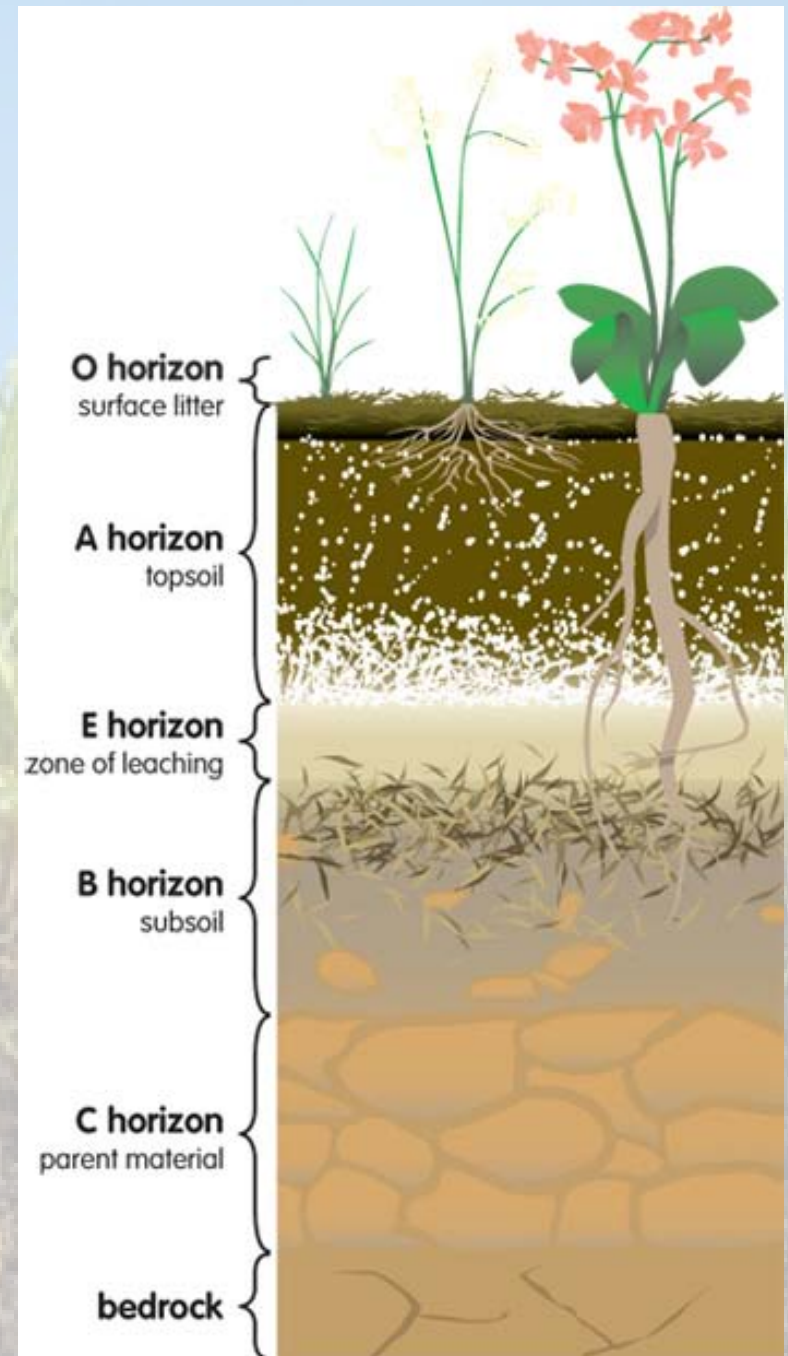
Layer of mineral-rich soil with most organic matter accumulation and soil life. This layer eluviates (is depleted of) iron, clay, aluminum, organic compounds, and other soluble constituents.



Soil Layers

E) Eluviated

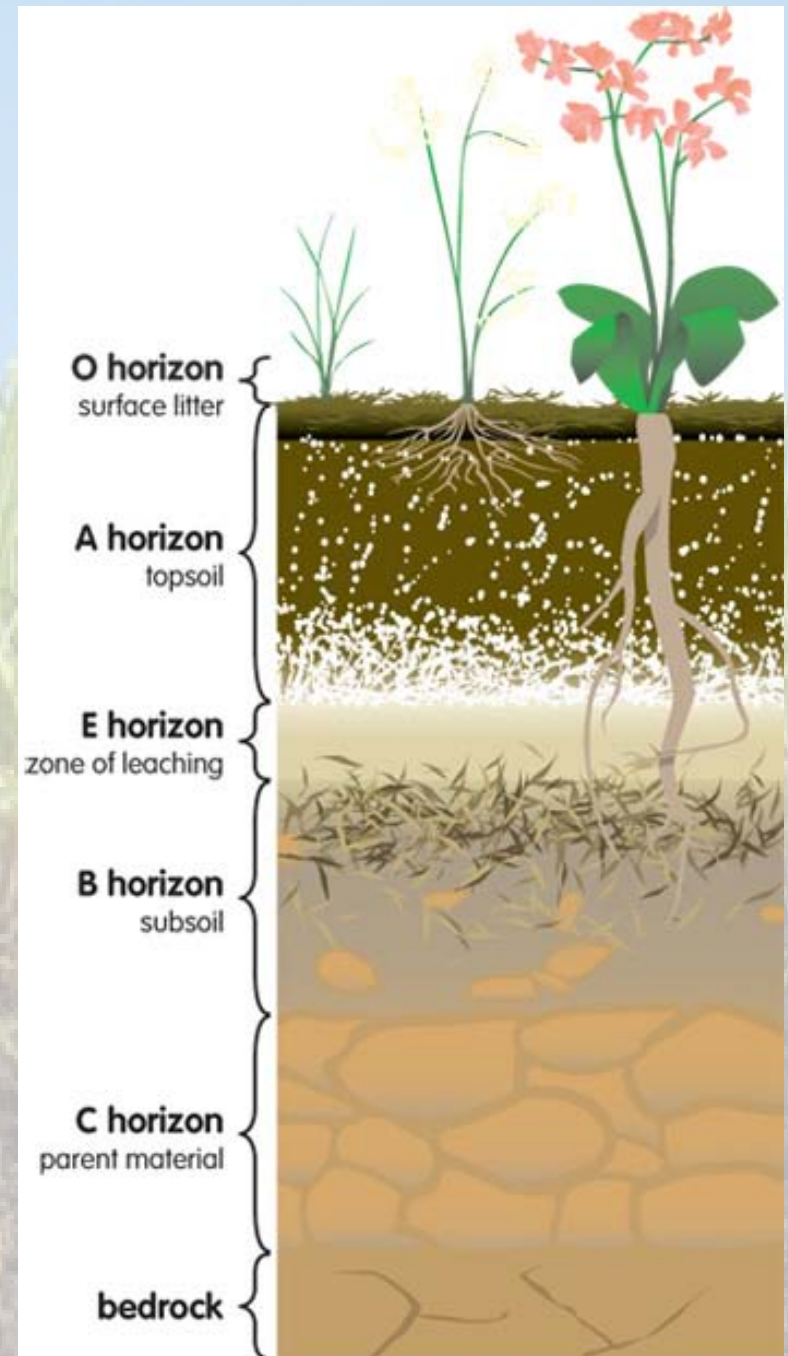
Not found in all soil profiles, the Eluviated horizon has been significantly leached of its mineral and/or organic content, leaving a pale layer largely composed of silicates. These are present only in older, well-developed soils.



Soil Layers

B) Subsoil

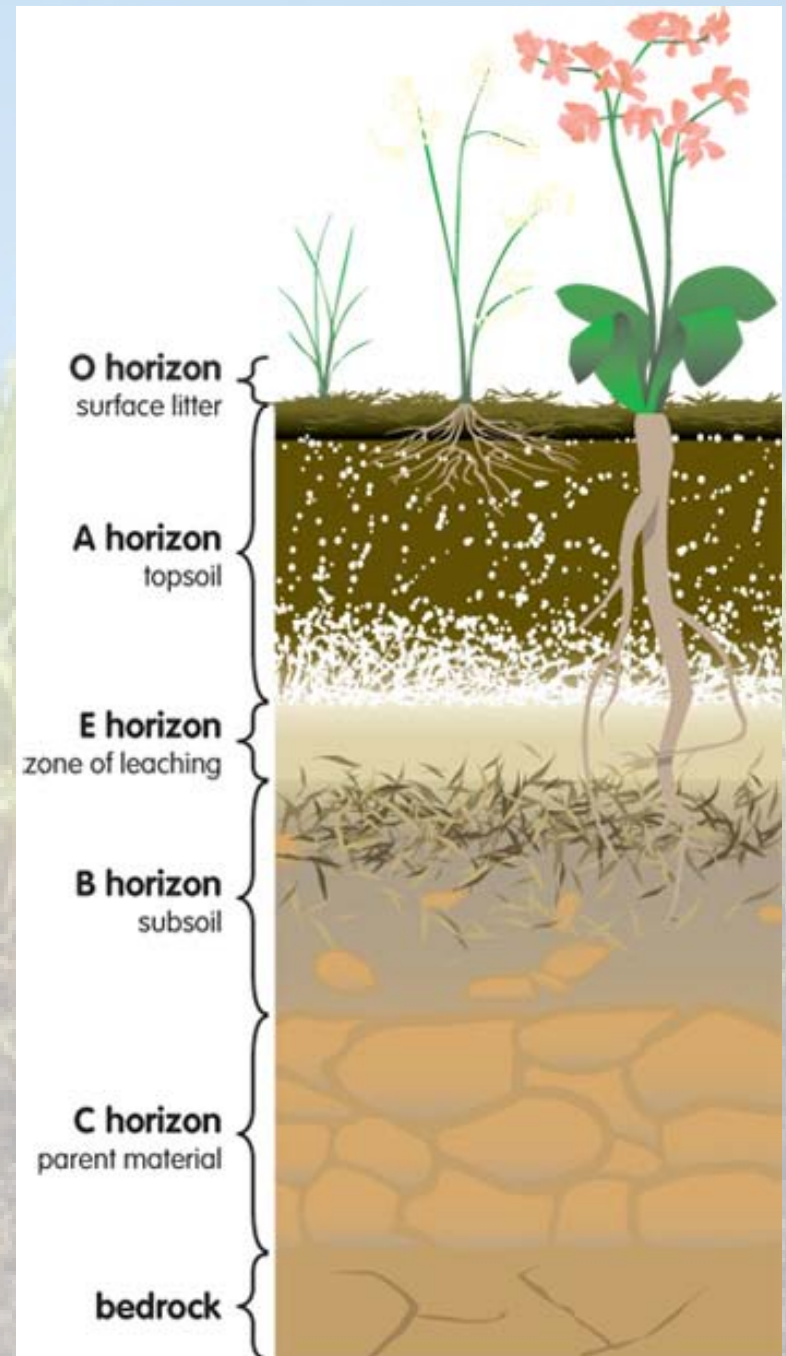
This layer accumulates iron, clay, aluminum and organic compounds, a process referred to as illuviation.



Soil Layers

C) Parent rock

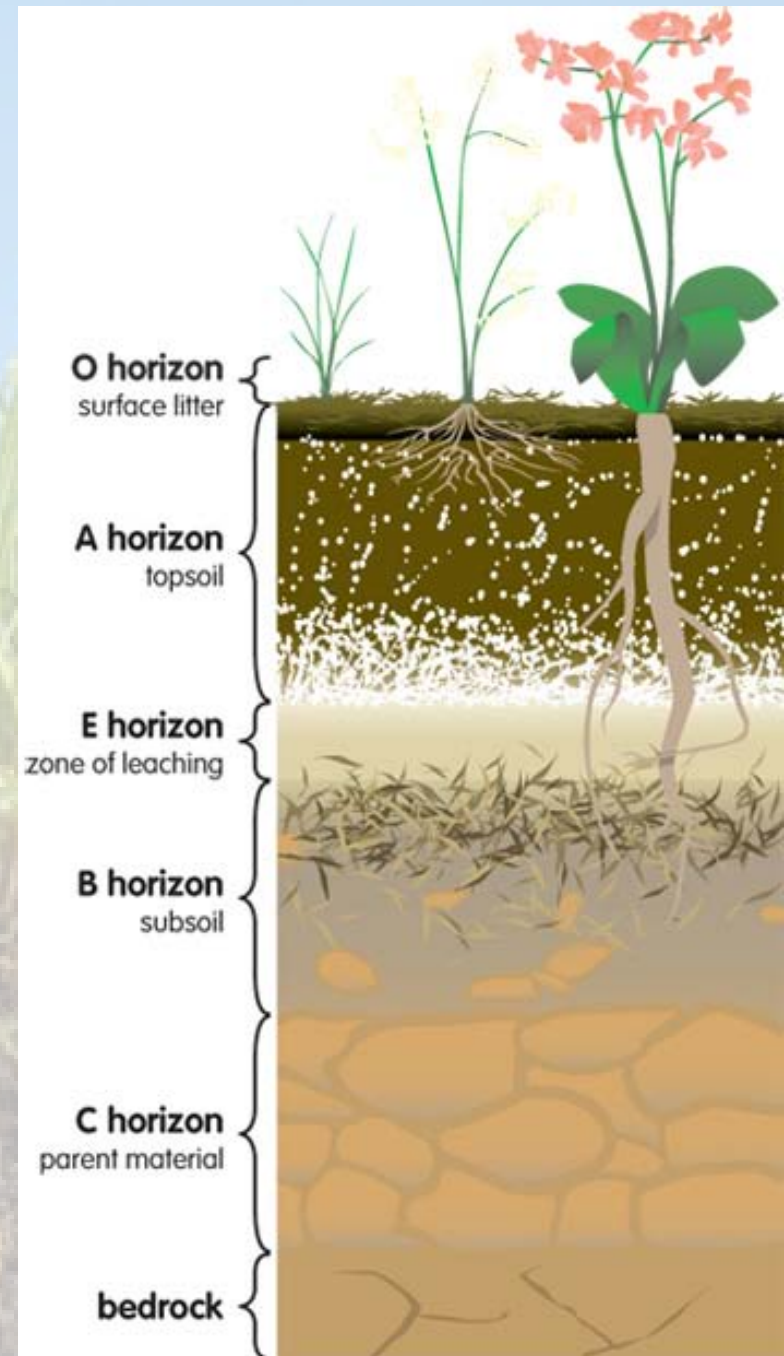
Layer of big unbroken rocks. This layer may accumulate the more soluble compounds.



Soil Layers

R) Bedrock

Layer of partially-weathered bedrock at the base of the soil profile. Unlike the above layers, R horizons largely comprise continuous masses (as opposed to boulders in the C horizon) of hard rock.



Questions?

