
Soils:
One of Our
Natural
Resources!

Some call it dirt…..But it is Soil !!!

Soil is made of loose, weathered rock and organic material.

The rock material in soil contains three noticeable parts: sand, clay, and silt.

Soil, on the average, consists of 45% mineral, 25% water, 25% air and 5% organic matter.

This is just an average!

There are thousands of different soils throughout the world.

Five important factors influence the specific soil that develops.

Parent Material

This refers to the minerals and organic materials present during the soil's formation.

Parent Material

Materials from volcanoes, sediment transported by wind, water, or glaciers are some examples.

Question Break!

Think about the soils in our area. Where do you think our “parent material” came from?

Our parent material is mainly Marine sediment (ocean in origin), or produced by steam-river action.

It may be thousands of feet deep!

Climate

The climate of a particular region can have a major influence on the rate of soil formation.

Climate

Weathering processes like the cycles of freezing and thawing, along with wetting and drying vary with each region.

Living Organisms

Both plants and animals help create soil.

Living Organisms

As they die, organic matter incorporates with weathered parent material and becomes part of the soil.

Question Break!

Can you think of some organisms that might help mix and enrich the soil?

Living Organisms

The actions of moles, earthworms, bacteria, fungi, and round worms mix and enrich the soil.

Topography

The slope or hilliness of a region can have a major influence on the moisture and erosion of soils.

Topography

In many regions, moist, poorly drained soils are located in low areas.

Topography

Drier, well drained soils are often found in sloping hillsides. Erosion is often a problem here and can lead to lose of topsoil.

Time

It takes hundreds of years to form one inch of soil from parent material.

Time

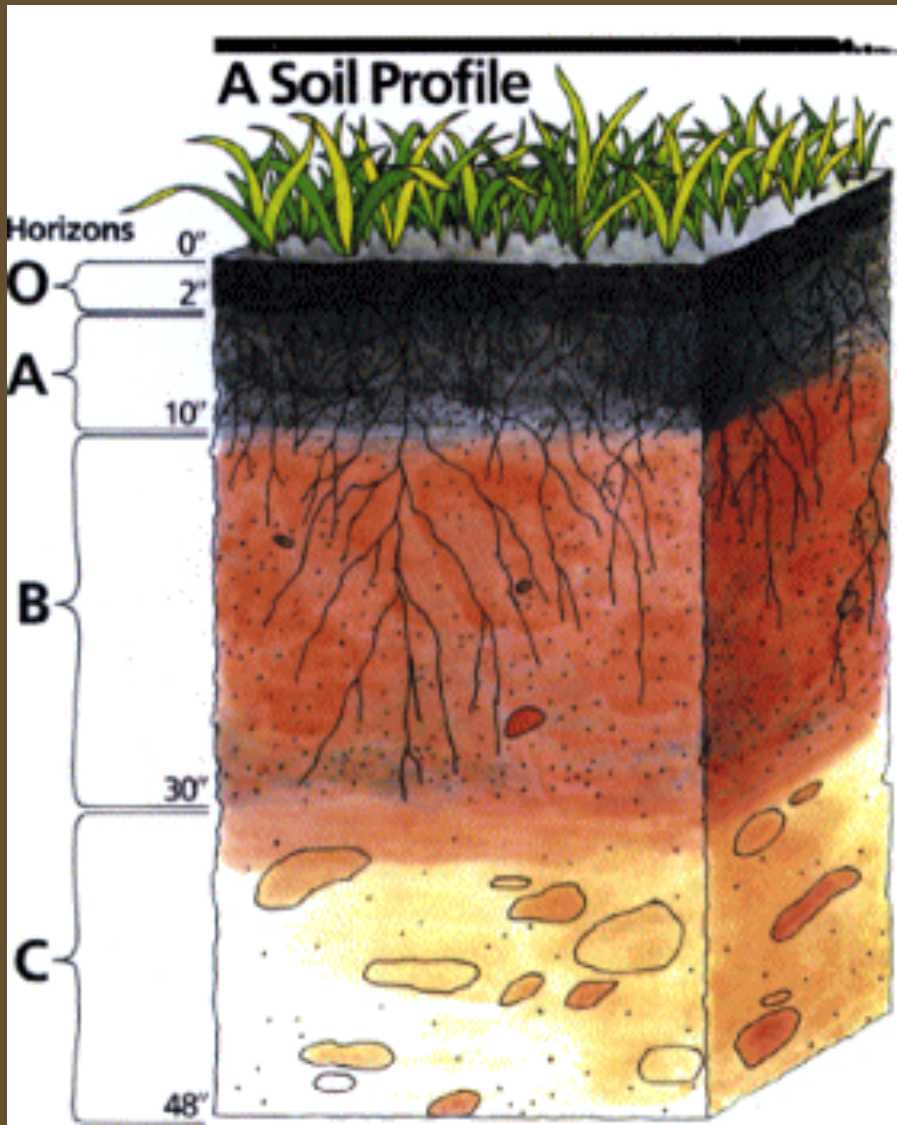
Only the top few centimeters are productive in the sense of being able to sustain plant growth.

Time

This is why **soil conservation** is so important!

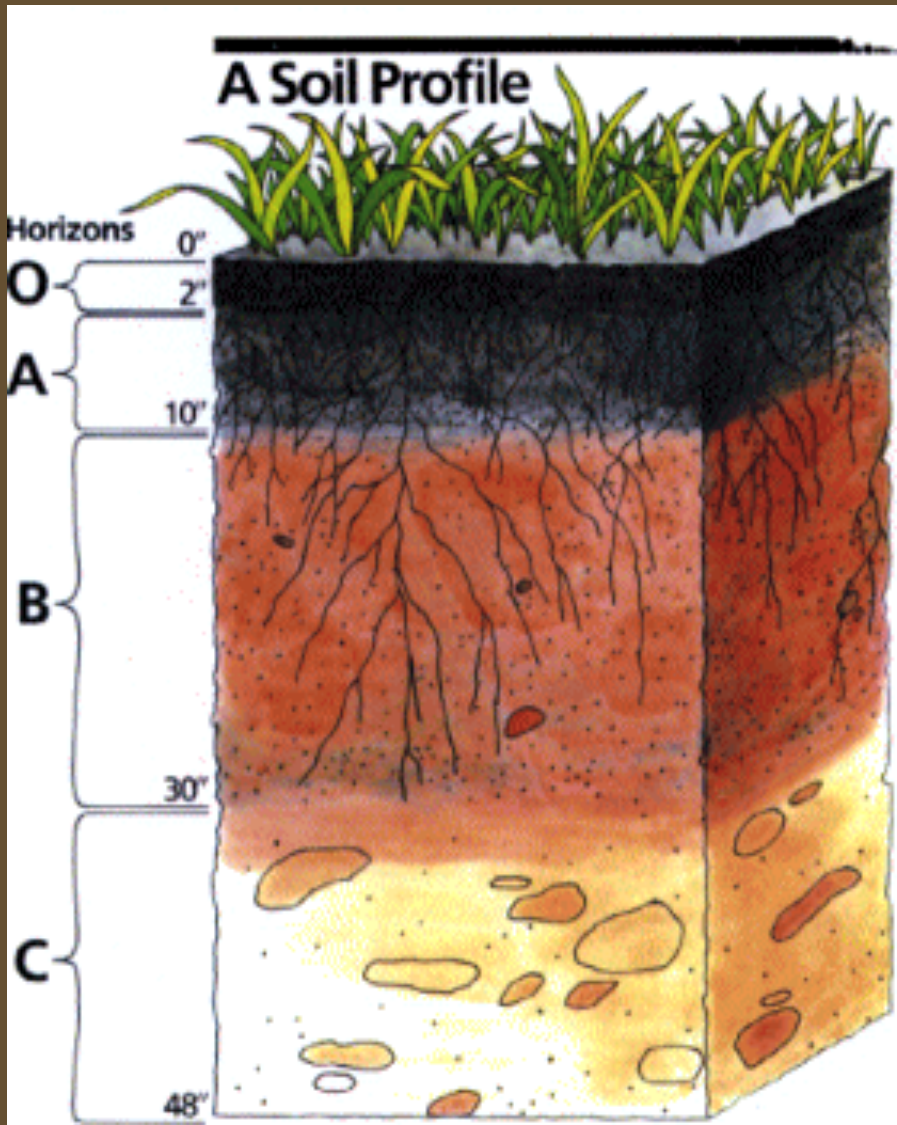
Soil Profile

In a cross-section of soil, various zones are formed.



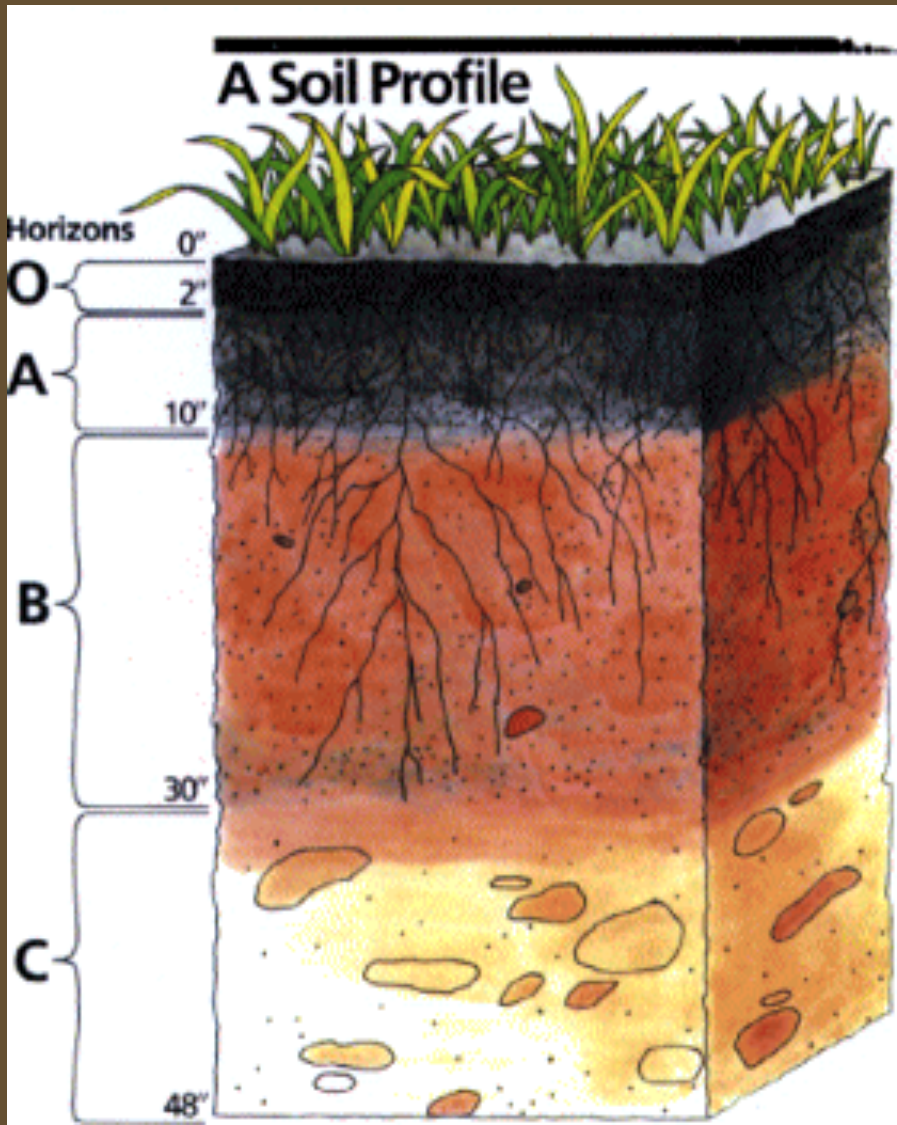
O Horizon: Organic Layer

It consists of leaf litter and other organic material lying on the surface of the soil.



A Horizon: Topsoil

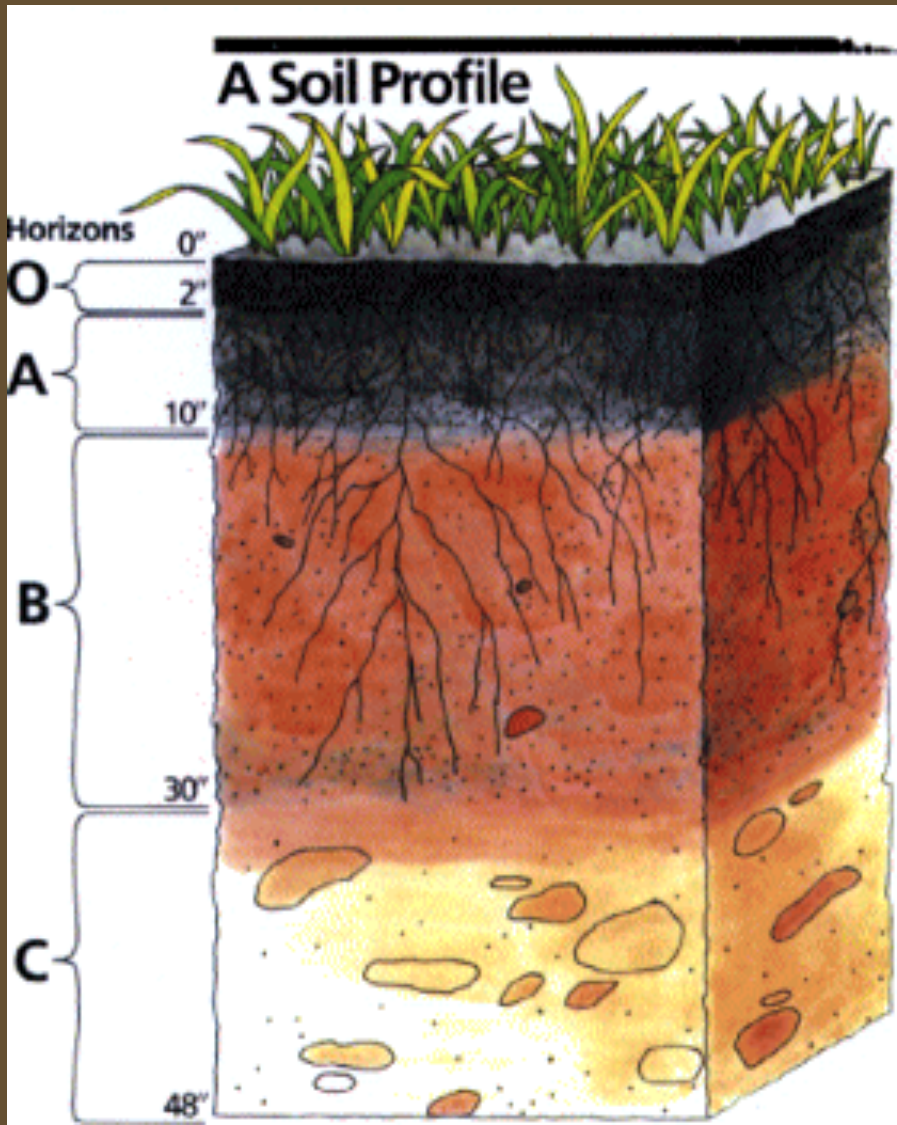
This layer is usually loose and crumbly with varying amounts of organic matter.



A Horizon: Topsoil

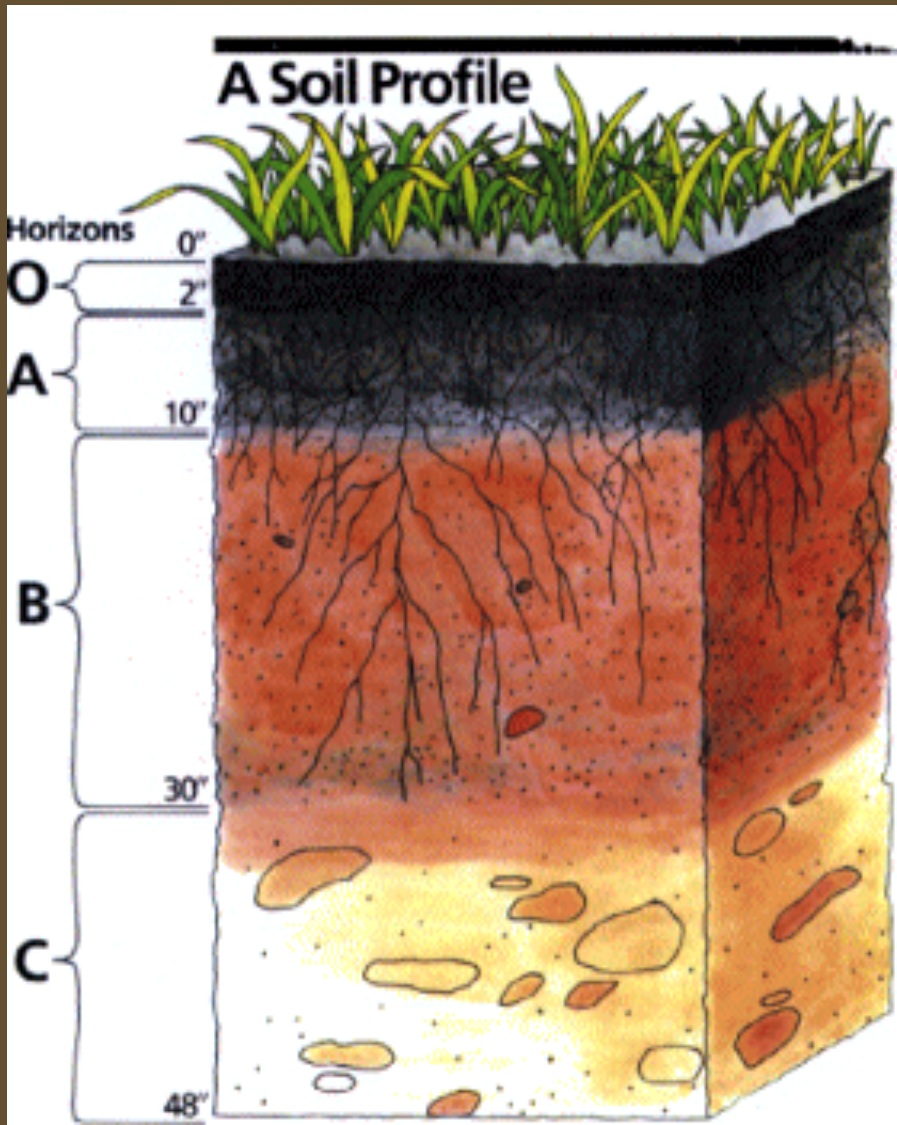
This is generally the most productive layer of the soil.

Conservation efforts are focused here!



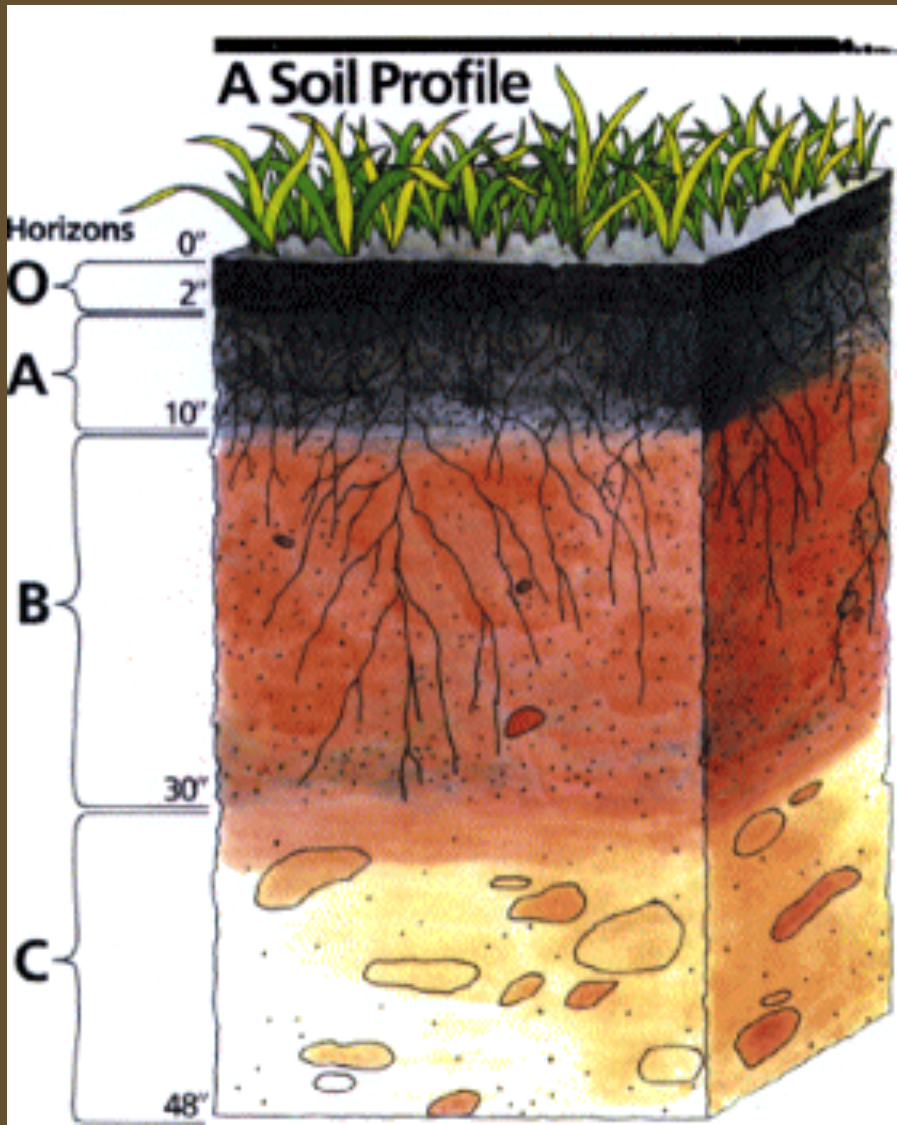
B Horizon: Subsoils

Subsoils are usually lighter in color, dense and low in organic matter.



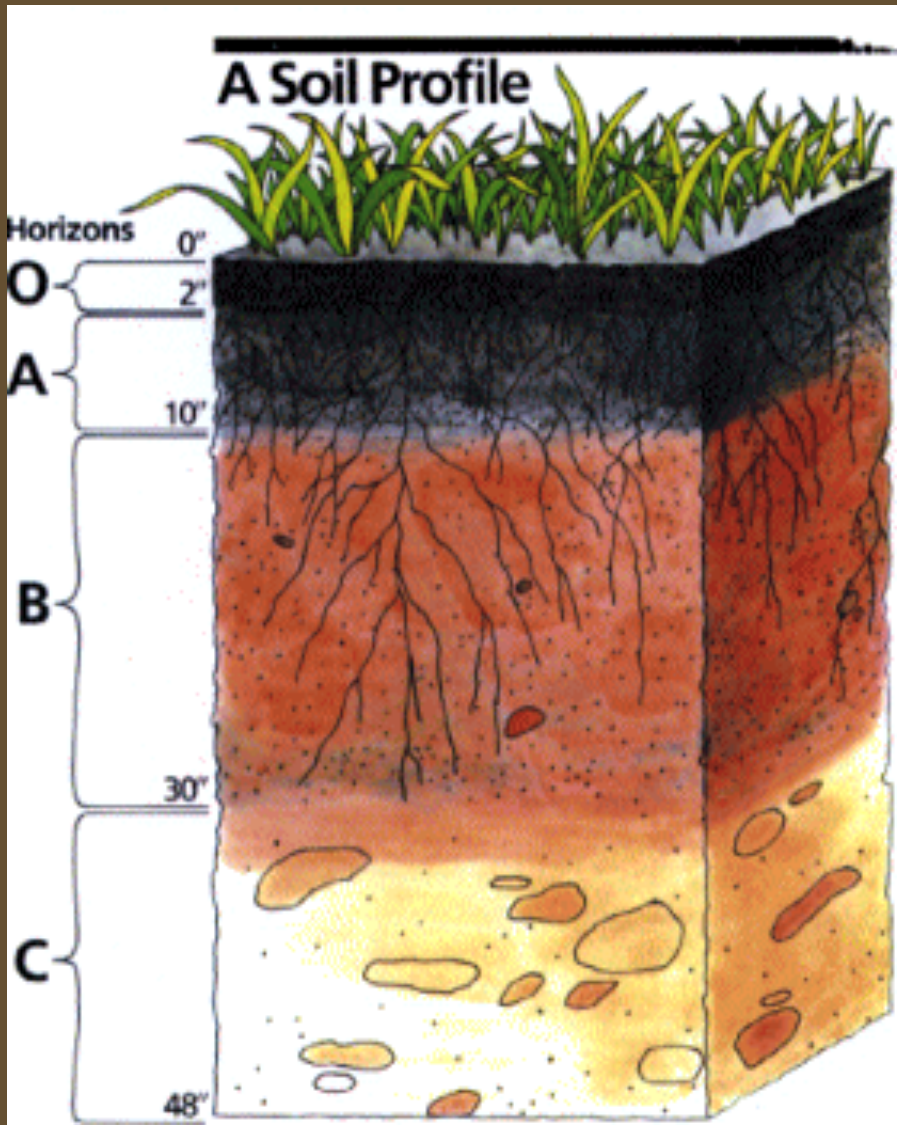
C Horizon: Transition

This layer of transition is almost completely void of organic mater and is made up of partially weathered parent material.



Bedrock

Below the C horizon the unweathered bedrock will be found.



Last Question!

What would happen to land based life as we know it, if there was no soil layer?