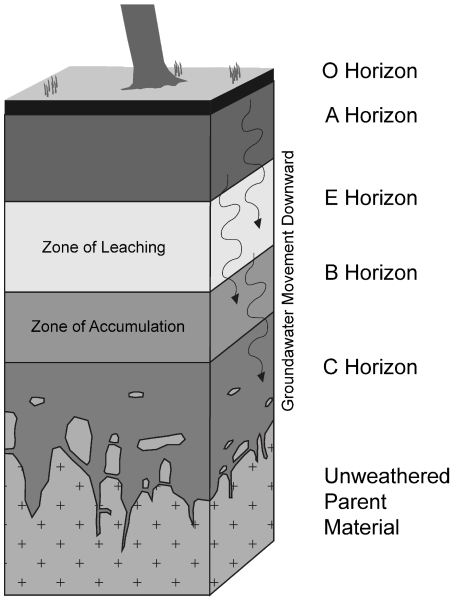
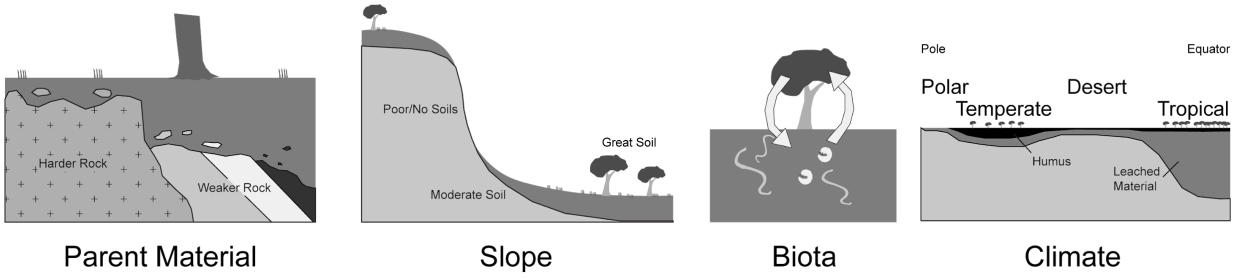
First some review of Weathering and Soils:

Soil Horizons



Soils form distinctive layers as they mature. Dependent on the local environment, a soil may or may not develop any of the particular layers illustrated above.

Soil Development



Soil developments depends on several factors illustrated above.
The **parent material** plays a role in providing certain minerals, and amount of material through time.
The **slope** of a particular area can be more or less condusive to soil development.
The **plants and animals** that live in the soil play a role in circulating the material.
The **local climate**, exemplified by latitude above, plays a role in controlling the abundance of rain, temperature, etc.
The other factor not illustrated but also important is that it takes significant **time** for soils to develop. Also, a soil will change its character through time.

Now, test your knowledge:

Briefly define the following terms:

horizon -

parent material -

Answer the following:

1. The development of caves in carbonate (limestone) rock is attributed to this type of chemical weathering.
    A. Oxidation
    B. Acid attack
    C. Dissolution
    D. Hydrolysis
    E. Erosion

2. The breakdown of minerals into clay minerals by the abundance of H^+ ions is credited to this type of chemical weathering.
    A. Oxidation
    B. Acid attack
    C. Dissolution
    D. Hydrolysis
    E. Erosion

3. This soil horizon represents incompletely weathered parent material, and is a transition zone between the soil and the bedrock.
    A. O horizon
    B. A horizon
    C. E horizon
    D. B horizon
    E. C horizon

4. This soil horizon is formed in soils that are heavily leached by down moving groundwater. The organic acids and CO2 formed in overlying horizons work to leach material from this horizon.
    A. O horizon
    B. A horizon
    C. E horizon
    D. B horizon
    E. C horizon

5. The abundance of organic material (recently fallen leaves, etc.) and highly decomposed plant material (i.e. humus) are unique to this layer.
    A. O horizon
    B. A horizon
    C. E horizon
    D. B horizon
    E. C horizon

6. This horizon forms the bulk of the “subsoil”, an area of accumulation of materials leached from above.
    A. O horizon
    B. A horizon
    C. E horizon
    D. B horizon
    E. C horizon

7. The best environment for soil (humus) development would be the following
    A. Weaker parent material, steep slopes, dry climate, and abundant biota.
    B. Weaker parent material, flat laying topography, temperate climate, and abundant biota.
    C. Strong parent material, moderate slopes, temperate climate, low biodiversity
    D. Strong parent material, flat laying topography, desert climate, and abundant biota.
    E. Weaker parent material, moderate slopes, tropical climate, abundant biota.

Now, think deeper:

On your own:

8. Describe what you know about the soils in your area according to the different soil development factors.

9. Describe what you don't know about the soils in your area according to the different soil development factors.

Working in groups of 2 or 3

10. Compare your answers to questions 8 and 9 above. Write anything that you learned from your group partners here.