

Soils

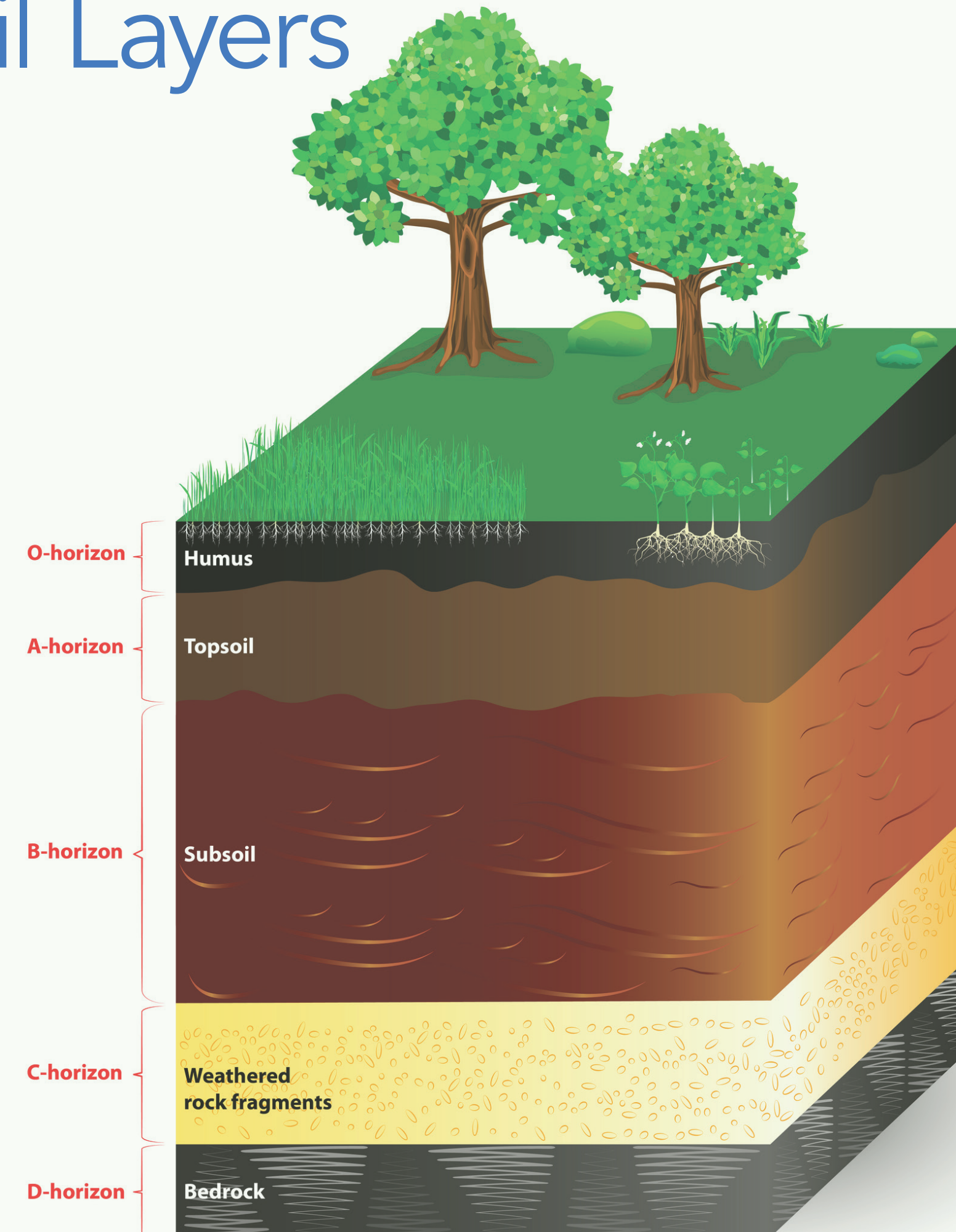
Soil is composed of solids (sand, silt, clay and organic matter), water, and gas. Soil covers the land and typically supports rooted plants. How many different types of plants can you see from where you are standing? Are they all rooted in the soil?

Did you know that there is a world of life happening just below your feet? Soils form as the physical environment (for example: temperature, rain), interacts with living organisms (like plants, small animals and microbes). Different layers in the soil—called horizons—result from plants, animals and bacteria finding and using the resources they need to live in the soil.

Plants obtain both water and minerals from the soil so they can live and grow. Although most of the dry weight of plants originates as carbon dioxide taken up from the atmosphere, the rooted plants around you could not survive without the soil.

There are many different soil types. The best ways to tell them apart is by digging a hole, or what soil scientists call test-pits. Test-pits make it possible to see soil layers, which are also called soil horizons. Horizons in a test-pit are represented by soil layers having different soil color and texture. To the right is a diagram showing common soil horizons found in a test-pit.

Soil Layers



The top “O” horizon is largely humus, or organic matter, that forms from the decomposition of dead plants. It can be thick in some soils but absent in others.

Horizon “A”, often called topsoil, is where most roots are and where the humus is mixed with tiny particles (sand, silt and clay) of the rocks found nearby or under the soil.

Horizon “B”, often called subsoil, is where roots become less frequent and minerals collect that are leached out from the layers above.

Horizon “C” is the parent material or weathered rock fragments from which the soil formed through the actions of plants, animals and microbes.

Horizon “D” is the bedrock.



An overturned tree along the trail. Within the roots you can see the different colored soils including the orange-brown subsoil. Credit: Abigail Gronberg