

# SOILS SUSTAIN THE WORLD

GEOLOGIC MAP DAY: FRIDAY, OCTOBER 14, 2022

U.S. Geological Survey • Association of American State Geologists •  
National Park Service • Natural Resources Conservation Service •  
Geological Society of America • Soil Science Society of America •  
NASA • American Geosciences Institute

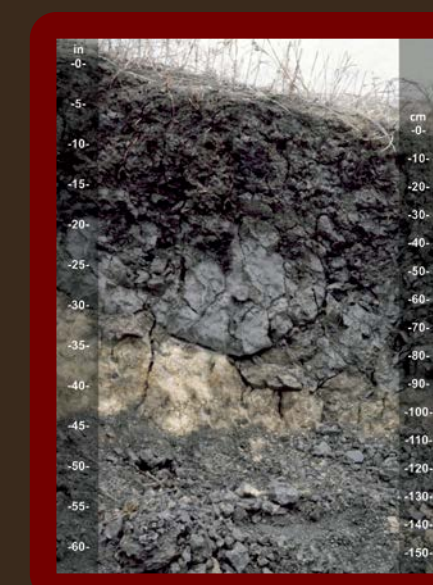
**There are thousands of types of soils** classified by their properties and relationships to the environment and living things. This map shows the twelve *soil orders* defined by the United States Department of Agriculture. Examples of five of these soil orders are shown below using their soil profiles, which are images of the soils exposed to a depth of 1–2 meters. As you read about these soils, think about the effects soils have on how we all live and work and products that soils provide. Learn about the roles soils have in maintaining Earth's sustainability using the information and activities on this poster.



**Gelisols** are soils frozen to a depth of 2 meters and are typically found in arctic regions. In certain areas these soils store large amounts of carbon. As these soils thaw, previously-frozen organic carbon compounds in the soil are decomposed, releasing carbon dioxide into the atmosphere.



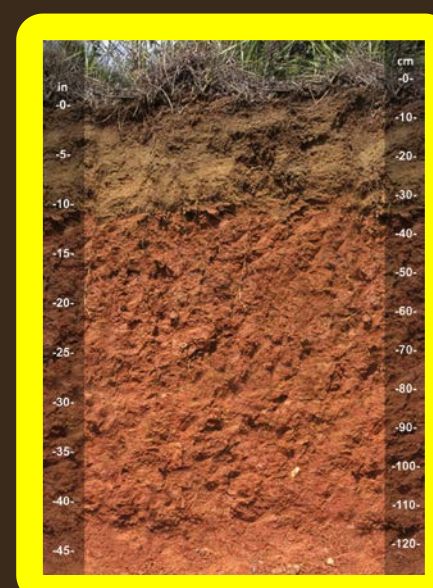
**Mollisols** are known for being deep, dark soils associated with native grasslands. The dark colors of these soils are derived from the large amount of plant matter that is deposited into the soil each year. These soils are well-suited for crop production.



**Vertisols** are heavy clay soils that shrink when dry and expand when wet. They are typically found in grasslands or savannas and can support crop production. However, the shrinking and swelling of these soils can crush plant roots and contribute to damage caused to structures built on them.



**Histosols** are soils that have at least 40 cm of organic material in the upper 80 cm. These soils are primarily located in wetlands and bogs. They are commonly found in coastal areas and are critical for flood moderation, water filtration, and wildlife preservation.



**Ultisols** are well-developed, red, clay-rich, acidic soils that naturally support a mixed-forest vegetation. If native forest vegetation grown in Ultisols is cleared, the soils may be used for plantation forestry and are also well-suited for construction purposes.

Global Soil Orders map by USDA-NRCS  
Soil and Plant Science Division. Ocean  
background from Esri, Redlands, CA.  
Soil photos provided by John A. Kelley,  
USDA-NRCS. Top background photo:  
USDA/Lance Cheung

