The 12 Soil Orders

of US System of Soil Classification

Andisols form from weathering processes that generate minerals with little orderly crystalline structure. These minerals can result in an unusually high water and nutrient-holding capacity.
As a group, Andisols tend to be highly productive soils. They include weakly weathered soils with much volcanic glass as well as more strongly weathered soils.
They are common in cool areas with moderate to high precipitation, especially those areas associated with volcanic materials. They make up about 1% of the world's ice-free land surface.

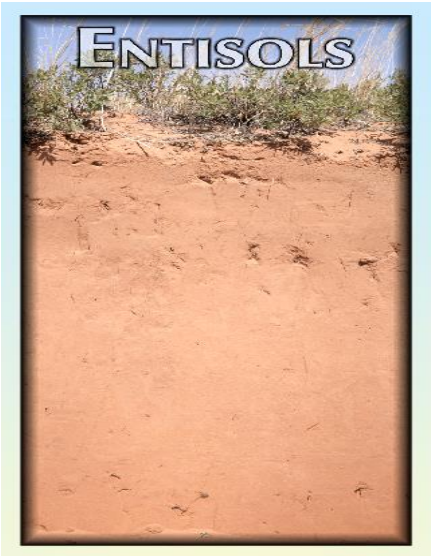
Alfisols are in semiarid to moist areas. These soils result from weathering processes that leach clay minerals and other constituents out of the surface layer and into the subsoil, where they can hold and supply moisture and nutrients to plants.
They are formed primarily under forest or mixed vegetative cover and are productive for most crops.
Alfisols make up about 10% of the word's ice-free land surface.

Aridisols are soils that are too dry for the growth of mesophytic plants. The lack of moisture greatly restricts the intensity of weathering processes and limits most soil development processes to the upper part of the soils. Aridisols often accumulate gypsum, salt, calcium carbonate and other materials that are easily leached from soils I more humid environments.
Aridisols are common in the deserts of the world.
Aridisols make up about 12% of the wordl's ice-free land surface.

Entisols are soils that show little or no evidence of pedogenic horizon development. Entisols occur in areas of recently deposited parent materials or in areas where erosion or deposition rates are faster than the rate of soil development.

Dunes, steep slopes, and flood plains. They occur in many environments.

Entisols make up about 16% of the world's ice-free land surface.



Gelisols are soils that have permafrost near the soil surface and/or have evidence of cryoturbation (frost churning) and/or ice segregation.

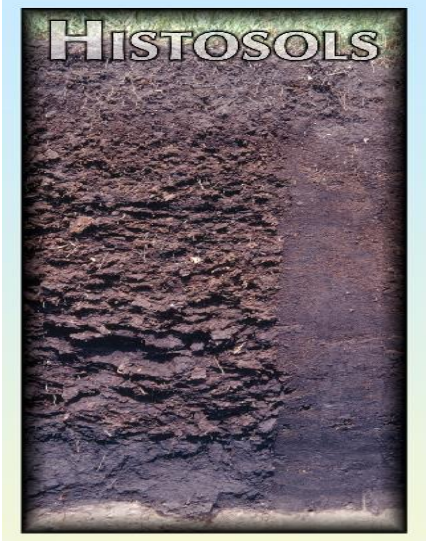
Gelisols are common in the higher latitudes or at high elevations.

Gelisols make up about 9% of the world's ice-free land surface.

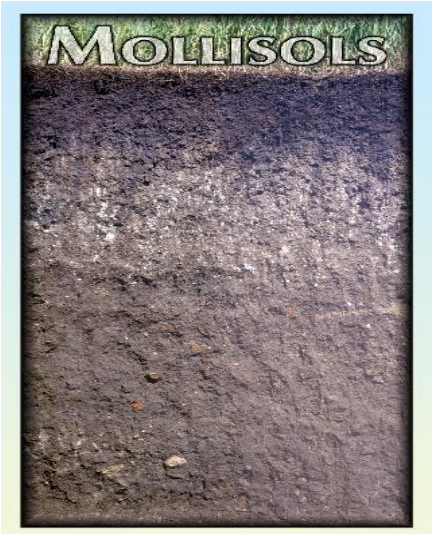
Histosols have a high content of organic matter and no perma-frost. Most are saturated year round, but a few are freely drained. Histosols are commonly called bogs, moors, peats, or mucks.

Histosols form in decomposed plant remains that accumulate in water, forest litter, or moss faster than they decay. If these soils are drained and exposed to air, microbial decomposition is accelerated and the soils may subside dramatically.

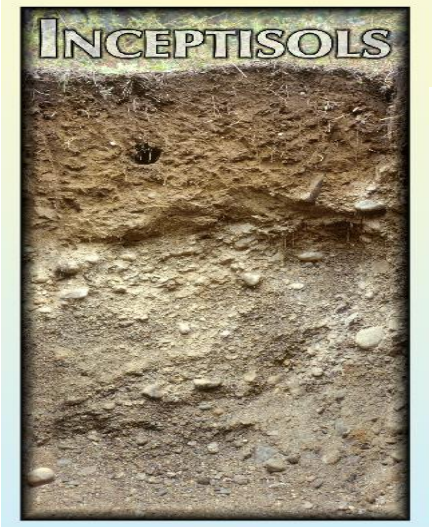
Histosols make up about 1% of the world's ice=free land surface



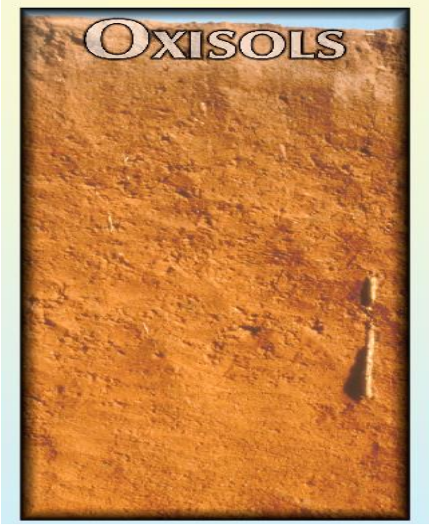
Mollisols are soils that have a dark colored surface horizon relatively high in content of organic matter. The soils are base rich throughout and therefore are quite fertile.
Mollisols characteristically form under grass in climates that have a moderate to pronounced seasonal moisture deficit. They are extensive soils on the steppes of Europe, Asia, North America and South America.
Mollisols make up about 7% of the world's ice-free land surface.



Inceptisols are soils of semiarid to humid environments that generally exhibit only moderate degrees of soil weathering and development.
Inceptisols have a wide range in characteristics and occur in a wide variety of climates.
Inceptisols make up about 17% of the world's ice-free land surface.



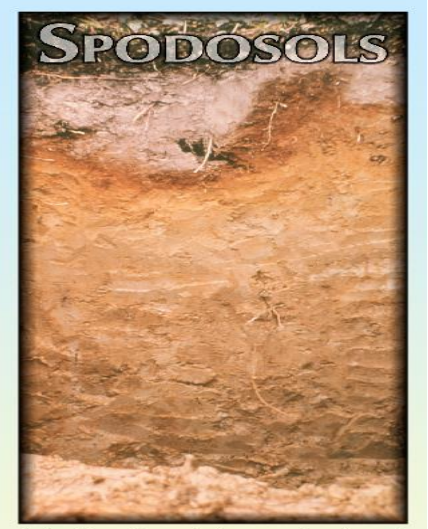
Oxisols are highly weathered soils of tropical and subtropical regions. They are dominated by low activity minerals, such as quartz, kaolinite, and iron oxides. They tend to have indistinct horizons.
Oxisols characteristically occur on land surfaces that have been stable for a long time. They low natural fertility as well as low capacity to retain additions of lime and fertilizer.
Oxisols make up about 8% of the world's ice free surface.



Spodosols formed from weathering processes that strip organic matter combined with aluminum (with or without iron) from the surface layer and deposit them in the subsoil. In undisturbed areas a gray eluvial horizon that has the color of uncoated quartz overlies a reddish brown or black subsoil>

Spodosols commonly occurin areas of course-textured deposits under coniferous forests of humid regions. They tend to be acid and infertile.

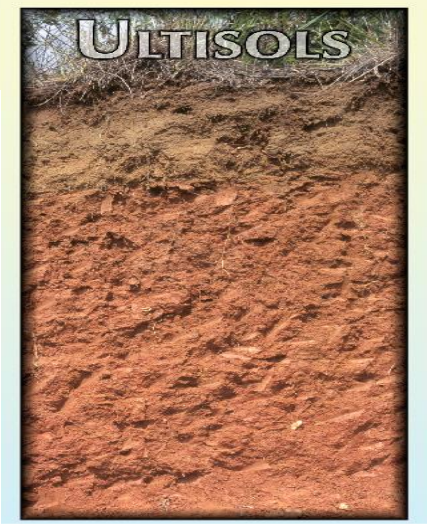
Spodosol make up about 4% of the world's ice-free land surface.



Ultisols are soils in humid areas. They formed from fairly intense weathering and leaching processes that result in a clay-enriched subsoil dominated by minerals, such as quartz, kaolinite, and iron oxides.

Location: Ultisols are typically acid soils in which most nutrients are in the upper few inches. They have moderately low capacity to retain additions of lime and fertilizer.

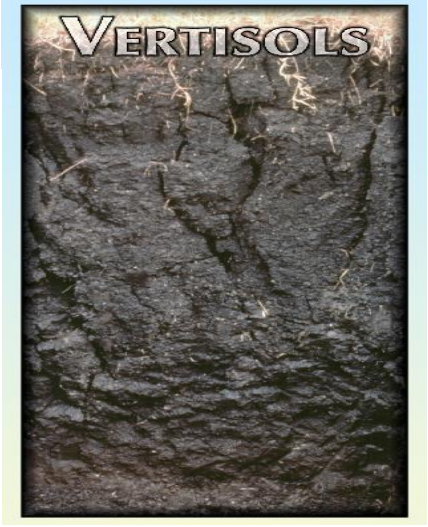
Ultisols make up about 8% of the world's ice-free surface



Vertisols have a high content of expanding clay minerals. They undergo pronounced changes in volume with changes in moisture. They cracks that open and close periodically, and that show evidence of soil movement in the profile.

Because they swell when wet, vertisols transmit water very slowly and have undergone little leaching. They tend to be fairly high in natural fertility.

Vertisols make up about 2% of the world's ice-free land surface.



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