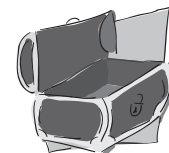


Glossary



Acid Soil

A soil that contains more hydrogen ions than hydroxide ions and therefore has a pH less than 7.0

Alluvium

Sediment transported by flowing water (e.g. a stream)

Anomaly

Something irregular or abnormal

Basic Soil

A soil that contains more hydroxide ions than hydrogen ions and therefore has a pH greater than 7.0

Blocky Structure

Irregular block-like soil peds that are usually 0.5 cm to 5.0 cm in diameter

Bulk Density

Mass of dry soil per unit volume (expressed in GLOBE as grams per cubic centimeter)

Chroma

When referenced to hue, the level of saturation of a color

Clay

A mineral particle <.002 mm in size that has a “sticky and dense” feel when moistened and rubbed between the fingers

Columnar Structure

A type of soil structure where the soil peds (or chunks) are in the shape of a column with a rounded top. Columnar structure is found in arid regions and generally ranges between 1 and 10 cm long.

Concretion

A cemented mass of a chemical compound, such as iron oxide or calcium carbonate, that can be removed intact from the soil

Consistence

How easy or hard it is for a soil ped to break apart when it is squeezed

Cryptoturbation

Process of freezing, thawing, and churning of a soil

Diurnal cycle

A daily cycle, a basic repetition period of 24 hours. All processes that are dominated by the sun are diurnal. Tides, in contrast, repeat cycles twice daily.

Effervescence

The bubbling action that occurs as a gas comes out of a liquid such as when carbon dioxide gas is produced by the reaction of carbonate coatings on soil being treated with an acid like vinegar

Eluviation

The removal of materials from one horizon which are then “illuviated” or deposited into a lower horizon

Erosion

The removal and movement of soil materials by water, wind, ice, or gravity as well as by human activities such as agriculture or construction

Evaporation

Water on Earth’s surface or in the soil absorbs heat from the sun to the point that it changes from a liquid to a gas and moves into the atmosphere

Extremely Firm

A type of soil consistence in which soil peds require extreme pressure, requiring the use of a tool (e.g., a hammer), to break

Face

The way an exposed section of soil or soil profile appears

Fertility

The ability of a soil to supply the elements and compounds needed for plant growth

Fill

Soil, rock, or other material that has been added to a site for construction purposes usually to bring the surface to a certain level

Firm

A type of soil consistence in which the soil peds require significant pressure before breaking



Floury

Having the feel of finely ground flour – smooth and powdery

Free Carbonates

Carbonate materials that form coatings on soil that react with an acid, such as vinegar, to form carbon dioxide gas

Freeze-thaw

The mechanical break up of rock caused by the expansion of freezing water in cracks and crevices

Friable

A type of soil consistence in which the soil ped breaks easily when squeezed between the thumb and fore finger with a small amount of pressure

Glacial Till

Sediment deposited from a glacier

Granular Structure

Roundish soil peds with an appearance like “cookie crumbs” that are usually less than 1.0 cm in diameter

Gravimetric

Analysis of soil moisture that depends on weighing the soil in a moist and dry state and determining the difference

Ground Water

Water stored underground in a saturated zone of rock, sand, gravel or other material

Heat Capacity

The ratio of the heat required to raise the temperature of a unit volume of soil by one degree

Horizon

An individual layer within the soil which has its own unique characteristics (such as color, structure, texture, or other properties) that make it different from the other layers in the soil profile

Hue

A particular color as distinguished from other colors on the color wheel

Humus

The part of the soil profile that is composed of decomposed organic matter from dead and decaying plants and animals and is usually dark colored

Hydrometer

An instrument based on the principles of buoyancy used to measure the specific gravity of a liquid containing suspended soil particles in relation to the specific gravity of pure water at a specified temperature

Illuviation

The deposit of materials carried by water from one horizon into another within the soil (such as clay or nutrients)

Infiltration

Downward entry of water into the soil

In situ

Location at a particular site

Leaching

Removal of soluble material in solution from the soil by the movement of water through the soil

Lithosphere

The outer layer of soil and rock on a planet is called the “lithosphere” after the Greek word “lithos” meaning “stone.”

Litter

Leaves, needles, twigs, branches, stems, or fruits covering the soil from the surrounding trees in a forest

Loam

Soil that contains an approximately equal amount of sand, silt, and clay particles.

Loess

Fine sediment transported by wind

Loose

A type of soil consistence in which the soil grains do not stick to one another (i.e. structure is single grained).

Massive Structure

A structureless soil in which all soil particles are stuck together and there are no distinct peds

Metadata

Data about data. Soil moisture data requires metadata describing the vegetation cover and possible sources of water in order to be interpreted properly.

**Mottles**

Streaks of spots of different colors in a soil interspersed with the dominant soil color, usually indicating poor drainage

Organic Matter

Decomposed animal or plant material that is added to the soil and becomes a part of the soil profile. When it is fully decomposed and incorporated into the soil, organic matter becomes a dark, moist, nutrient rich substance called humus and the plant and animal material from which it formed can no longer be recognized

Particle Density

The mass per unit volume of soil particles, excluding pore space

Particle Size Distribution

The amount (percent) of each of sand, silt, and clay in a soil sample

Ped

An individual unit of natural soil structure or aggregation (such as granular, blocky, columnar, prismatic, or platy)

Pedosphere

The thin outer layer of the Earth which is made up of soil. The pedosphere acts as an integrator between the atmosphere, biosphere, lithosphere, and hydrosphere of the Earth.

Permafrost

A continuously frozen soil horizon

pH

Measure of the acidity of a soil

Platy Structure

Flat, plate-like soil peds

Porosity

Percentage of soil volume not occupied by solid material

Prismatic Structure

A type of soil structure in which the soil ped is in the shape of a prism, generally ranging from 1.0 – 10.0 cm

Profile

The “face” of a soil when it has been cut vertically that shows the individual horizons and soil properties with depth

Runoff

Water that falls on the land surface but does not infiltrate and therefore flows across the land surface

Sand

A mineral particle between 0.05 and 2.0 mm in size that has a “gritty” feel when moistened and rubbed between the fingers

Saturation

When the pores of a soil are completely filled with water

Single Grained Structure

A structureless soil in which each soil grain is individual and loose in the soil (i.e. there are no peds)

Silt

A mineral particle between 0.002 and 0.05 mm in size that has a “floury, smooth” feel when moistened and rubbed between the fingers

Soil Profile

The “face” of a soil when it has been cut vertically that shows the individual horizons and soil properties with depth

Soil Water Content (SWC)

A measure of how much water is present in the pores of a soil, specifically, the ratio of the mass of water to the mass of dry soil.

Structure

The shape of soil units (peds) that occur naturally in a soil horizon. Some possible soil structures are granular, blocky, prismatic, columnar, or platy. Soils can also be structureless if they do not form into peds. In this case, they may be a consolidated mass (massive) or stay as individual particles (single grained).

Subsoil

The common term for the layers beneath the topsoil

Supernatant

When soil particles are suspended and allowed to settle, the liquid above the settled soil is cleaner than the soil below



Texture

The way soil “feels” when it is squeezed between the fingers or in the hand. The texture depends on the amount of sand, silt, and clay in the sample (particle size distribution), as well as other factors (how wet it is, how much organic matter is in the sample, the kind of clay, etc.)

Topsoil

The common term for the top layer of soil

Transect

In any field (outdoor) study, a transect consists of a line of study, often divided into intervals where observations or samples are collected.

Transpiration

The transfer of water as a gas from plant leaves to the atmosphere through the stomates

Uniform

This term is used in its traditional sense when characteristics display similar properties. Two related words are homogeneous (distributed evenly) and normal (distributed about a central mean value and described by a statistical equation).

Value

When referenced to hue, an indication of the lightness of a color

Volatilization

Evaporation of water vapor or other gases from the soil

Water Erosion

The wearing away of the land surface by water creating the detachment and movement of soil from one location to another.

Wind Erosion

The wearing away of the land surface by wind creating the detachment and movement of soil from one location to another