

GLOSSARY of Terms



acid soil, alkaline soil, neutral soil	Acidity and alkalinity describe one aspect of the soil's chemical reaction. A pH of 7 means that the soil is neutral, neither acid nor alkaline. A pH below 7 indicates acidity, and above 7 indicates alkalinity. Many plants will grow well over a range of pH from slightly acid to slightly alkaline, but some are more particular.
aeration	The process of loosening or puncturing the soil by mechanical means in order to increase water and air permeability.
aggregation	How sand, silt and clay come together to form larger granules. Good aggregation is apparent in a crumbly soil with water-stable granules that do not disintegrate easily. Well-aggregated soil has greater water entry at the surface, better aeration, and more water-holding capacity than poorly aggregated soil.
annual	A plant that completes its life cycle in one growing season or a single year. The seed germinates and the plant grows, blooms, fruits/sets seed and dies all in one growing season. The phrase "grow as an annual" or "treat as an annual" refers to technically perennial plants that are most attractive only during their first year and, hence, are better grown as new plants each year.
aquifer	A sand, gravel or rock formation capable of storing or conveying water; an underground geological formation or group of formations containing usable amounts of groundwater that can supply wells or springs.
available nutrients	Minerals or chemicals in forms that plants can absorb and utilize for growth.
berm	A mound or bank of earth.
biennial	A plant that completes its life cycle in two years. Typically, plants grow vegetatively during the first year, then fruit and die the second year.
border	A soil berm 15 to 18 inches tall created by tillage to keep flood irrigation water inside a portion of the pasture.
broadcast seeding	The application of seed by hand or with the aid of a seed spreader.
buffer strip	Narrow area of permanent vegetation often planted at the edge of a field, typically to slow the flow of water, slow the velocity of the wind, or to filter sediment and chemicals from runoff.
buffer zone	A neutral area that acts as a protective barrier separating two conflicting forces; an area that acts to minimize the impact of pollutants on the environment or public. For example, a stream buffer is an area of trees, shrubs and/or grasses protecting a water body from erosion and filtering runoff from nearby farm fields or urban areas.
capability class	A classification system that shows, in a general way, the suitability of soils for most kinds of field crops.
claypan	A hard, compact layer in the subsoil consisting mainly of clay; separated from overlying materials by a sharply defined boundary in the soil profile. Claypans usually impede the movement of water, air and plant roots.

clay soil	Also known as “heavy” soil; a soil composed of extremely small mineral particles; sticky, heavy soil that is difficult to work. When clay soil gets wet, it dries out slowly because downward movement of water (drainage) is slow. Clay soil expands when wet and cracks when dry.
complete fertilizer	Any organic or inorganic materials, natural or synthetic, that supplies all three of the primary nutrient elements for plant growth: nitrogen (N), phosphorous (P) and potassium (K).
compost	A soil amendment made from organic waste materials (dead leaves, etc.). The materials are stored in a manner in which moisture, heat and microorganisms partially decompose them.
conifer	A plant that produces cones; a plant belonging to the family Coniferae, such as pines, junipers and cedars.
deciduous	Any plant that sheds all of its leaves at one time each year (typically autumn).
dike	Earth ridge built to guide or hold water within prescribed limits; a small levee.
dissolved oxygen (DO)	Oxygen dissolved in water and readily available to fish and other aquatic organisms.
diversion	A channel to slow, divert or collect water and/or reduce runoff.
drainage	Movement of water out of the soil profile. When this happens quickly, the drainage is “fast,” or the soil is “well drained.” When it happens slowly, the drainage is said to be “slow,” or the soil is “poorly drained.” Most plant roots need oxygen as well as water, and soil that remains saturated with water deprives the roots of necessary oxygen.
drip irrigation	A system for watering at points on or just below the soil surface so that a plant’s root zone is thoroughly moistened without water being wasted. This is accomplished with very low pressure over a long period of time to achieve the necessary penetration.
ecosystem	A community of plants, animals, people and the physical environment in which they live.
effluent	Discharge or emission of a liquid or gas.
erosion	Detachment and movement of soil particles by wind or water; water erosion includes sheet and rill erosion as well as gully erosion.
eutrophication	Degradation of water quality due to enrichment by nutrients, primarily nitrogen (N) and phosphorous (P), which results in excessive plant (principally algae) growth and decay. When levels of N:P are about 7:1, algae will thrive. Low dissolved oxygen (DO) in the water is a common consequence.
evapotranspiration (ET)	Movement of water into the atmosphere by evaporation from the earth’s surface and by transpiration from plants.
fallow	The practice of leaving land either uncropped and weed-free, or with volunteer vegetation during at least one period when a crop would normally be grown; the objective may be to control weeds or to accumulate water and/or available plant nutrients.
floodplain	The land bordering a stream, built up of sediments from stream flood deposits, and subject to inundation when the stream is at flood stage. Also, the surface of an alluvial fan subject to flash flooding from the canyon above.

fungicide	Pesticide used to control fungi, including mold, rot and mildew.
groundwater	Water from wells and underground aquifers.
gully erosion	The erosion process whereby water accumulates and often recurs in narrow channels and, over short periods, removes the soil from this narrow area to considerable depths, often defined in terms of channels too deep to easily repair with ordinary farm equipment.
hard water	Characteristic of water which describes the presence of dissolved minerals. Carbonate hardness is caused by calcium and magnesium bicarbonate; noncarbon hardness is caused by calcium sulfate, calcium chloride, magnesium sulfate and magnesium chloride.
hardpan	A soil layer with physical characteristics that limit root penetration and restrict water movement.
heavy metals	Metals that have high density. In agronomic use, these include copper, iron, manganese, molybdenum, cobalt, zinc, cadmium, mercury, nickel and lead. Some of these play a role with plant nutrition in very small quantities but can become toxic to plants when they accumulate at high levels in the soil.
herbicide	Pesticide used to control undesirable vegetation. An herbicide can be applied as a pre-emergent to prevent germination of weed seeds or as a post-emergent to kill weeds after they have grown.
hydrologic cycle	The movement of water in and on the earth and atmosphere through processes such as precipitation, evaporation, runoff and infiltration.
infiltration	The downward entry of water into the soil profile from precipitation, irrigation or runoff; also called percolation.
insecticide	Pesticide used to control insects.
invasive species	A non-native species whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health. An invasive species can be a plant, animal or any other biologically viable species that enters an ecosystem beyond its native range.
irrigation	Application of water to soil when rainfall is insufficient to maintain desirable soil moisture for plant growth.
Irrigation Water Management (IWM)	The suite of irrigation strategies that landowners and growers use to save water, conserve energy and prevent contaminants from entering water supplies.
leaching	The process by which chemicals (fertilizers, pesticides, manure, etc.) are dissolved and transported through the soil by water; the washing out or flushing of a soluble substance from an insoluble one. Gardeners leach soil with water when they want to remove excess salts (see "salinity"). In high-rainfall areas, rainwater leaches both good and harmful substances from the soil.
loading	The quantity of a substance (or a contaminant) entering receiving waters.
loam	Soil that is rich in organic material, does not compact easily, and drains well after watering; an "ideal" garden soil; a mix of sand, silt and clay.
microclimate	The climate of a small area or locality (such as a back yard or a portion of it), as opposed to the climate of a county or state.

monoculture	The cultivation or growth of a single crop or organism, especially on agricultural or forest land.
mulch	Any plant residue, by-product or other suitable material applied to the soil surface to conserve moisture, control erosion, suppress weed growth, moderate soil temperatures, improve soil condition or assist in establishing cover. Examples include bark, wood chips, sawdust, straw or plastic.
nitrogen	One of three major elements required for plant growth; the first nutrient listed in the formulation on a fertilizer label (such as 10-8-6).
nonpoint source	Entry of a pollutant into a water body from widespread or diffuse sources with no definite point of entry. The source is not a readily discernible point like a discharge pipe.
noxious weed	Invasive plants that cause economic loss and harm the environment. Noxious weeds choke out crops, destroy range and pasture lands, clog waterways, affect human and animal health, and/or threaten native plant communities.
nutrients, available nutrients	Elements in the soil that can be readily absorbed and assimilated to nourish growing plants, e.g., nitrogen, phosphorous, iron and potassium.
Nutrient Management Plan	An assessment of how nutrients (commercial fertilizers and animal wastes) are utilized on a farm; includes a determination of how much fertilizer is appropriate to apply on crops. For a livestock operation, this includes an assessment of manure production, collection, storage and utilization.
organic matter, soil organic matter	Term used to identify the organic components in soil, including undecayed and decaying plant and animal tissues. Sometimes, the word "humus" is used synonymously with regard to soil.
overstory	The larger and taller trees that occupy a forest area and shade the young trees, brush, grass, forbs, etc. that grow below them.
permeability	Capacity of soil to move water.
perennial	A plant that lives for more than two years. The top growth may die down each winter, followed by new growth.
pesticide	A chemical used to control pests, such as animals, weeds, insects and diseases.
pH	A value that indicates the acidity of the soil. The scale ranges from 0 to 14, with 0 being more acid, 7 as neutral, and greater than 7 as alkaline (basic).
phosphorous	The second of three nutrients listed on a fertilizer label (such as 10-8-6).
pitch tube	A tubular mass of resin that forms on the surface of a tree's bark as the tree attempts to "pitch out" an insect.
point source	The release of a pollutant from a pipe or discrete conveyance into a water body or a water course, e.g., a wastewater treatment plant.
porosity	The volume of pores in a soil sample (nonsolid volume) divided by the bulk volume of the sample.

recharge	The periodic replacement of groundwater resources.
recharge area	Land area over which precipitation infiltrates into the soil and percolates downward to replenish an aquifer.
riffle	A rocky shoal or sandbar lying just below the surface of a waterway.
rill erosion	An erosion process where numerous small channels, typically a few inches deep, are formed.
riparian zone	The transition area between an aquatic ecosystem and the adjacent, upland area. These zones are identified by soil characteristics or plant communities and include the wet areas in and near streams, ponds, lakes, springs and other surface waters.
runoff	That portion of precipitation or irrigation water which fails to infiltrate the soil and flows over the soil surface.
salinity	Gardeners use this word when speaking of an excess of salts in the soil. Salinity can harm many plants, causing leaves to scorch and turn yellow and stunting plant growth.
sandy soil	A soil with comparatively large particles that are rounded rather than flattened. Compared to clay soils, sandy soils contain much more soil and air, drain well and warm quickly. They also dry out quickly, which necessitates frequent watering that washes out valuable nutrients. Also referred to as "light" soil with a "gritty" feel.
saturated zone	A portion of the soil profile in which all large pores are filled with water.
sediment	The soil material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by erosion (by air, water, gravity, etc.).
septic tank	Sewage disposal tank in which a continuous flow of waste materials is decomposed by anaerobic (in the absence of oxygen) bacteria.
sheet erosion	The removal of a relatively uniform thin layer of soil from the land surface by rainfall and largely unchanneled surface runoff (sheet flow).
silage	A mixture of raw chopped materials such as field corn, sorghum, grass, or clover that is converted into winter feed for livestock through a process of fermentation; this feed can be stored for several years with little loss of nutrients.
silt	An intermediate soil textural class between sand and clay. Silt consists of particles between 0.05 and 0.002 millimeters in diameter, has a smooth feel, and is not sticky when moist.
soil amendment	Matter (organic or inorganic) added to soil to improve texture, aeration, drainage and retention of nutrients or moisture.
soil profile	The arrangement of soil horizons or layers below the surface of the ground.
soil survey	A soil survey is a detailed report on the soils of an area. A soil survey contains maps with soil boundaries and photos, descriptions and tables of soil properties and features. Soil surveys are used by farmers, real estate agents, land use planners, engineers and others who desire information about the soil's properties.
soil texture	The texture of the soil resulting from the relative proportions of the various soil separates (sand, silt and clay) in a soil.

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soluble	Capable of being dissolved easily.
strip crops	The practice of growing two or more crops in alternating strips along contours, often perpendicular to the prevailing direction of wind or surface water flow.
subsoil	<i>(noun)</i> The stratum of weathered material that underlies the surface soil. <i>(verb)</i> To plow or turn up the subsoil.
systemic pesticide	A pesticide that moves inside a plant through absorption; the movement is usually upward and outward. There are systemic insecticides, fungicides and herbicides.
taproot	A main root that grows straight down. Dandelions have taproots, so do oak trees. Taproots can go very deep if there is a lack of surface water.
tillage pan, plow pan	A layer or layers in the soil which are highly compacted, hardened or very high in clay content relative to the layer immediately above.
transpiration	The release of moisture (absorbed largely by plant roots) through leaves. Temperature and humidity affect the transpiration rate.
understory	Any vegetation (trees, shrubs, grasses, forbs, lichens, mosses, etc.) growing under a relatively continuous cover of branches and foliage formed by the overstory.
unsaturated zone	Portion of the soil profile which contains both air and water. Water in this zone cannot enter a well.
vole	A small, typically burrowing, mouselike rodent with a rounded muzzle.
water right(s)	The right to draw water from a particular source, such as a lake, irrigation canal or stream.
watershed (drainage basin)	The land area (catchment) which captures precipitation and conveys it to a particular water body. It is bounded by ridges or "divides." A large watershed is made up of the smaller watersheds of all its tributaries.
water table	The upper level of a saturated zone in an aquifer below the soil surface.
wellhead protection	The practice of preventing pollutants from seeping into well water at or near any active or abandoned well.
wetlands	Areas that are regularly wet or flooded; areas with a water table within the root zone or standing at or above the land surface for at least part of the growing season. These areas are host to a prevalence of water-loving plants.