

7.0 GLOSSARY

acid soil - A soil having a pH of less than 7.0.

alkaline soil - A soil having a pH greater than 7.0.

amendment soil - (i) An alteration of the properties of a soil, and thereby the soil itself, by the addition of substances such as lime, gypsum and sawdust to it for the purpose of making the soil more suitable for the production of plants, (ii) any such substance used for this purpose.

aquifer - A body of rock that contains sufficient saturated permeable material, to conduct groundwater and to yield economically significant quantities of groundwater to wells and springs.

available nutrient - That portion of any element or compound in the soil that can be readily absorbed and assimilated by growing plants. ("available" should not be confused with "exchangeable").

available water - The part of the water in the soil that can be taken up by plants at rates significant to their growth. Usable, obtainable.

bedrock - The solid rock that underlies soil and the regolith or that is exposed at the surface.

calcareous soil - Soil containing sufficient calcium carbonate (often with magnesium carbonate) to effervesce visibly when treated with cold 0.1 N hydrochloric acid.

clay (soils) - (i) A mineral soil separate consisting of particles less than 0.002 mm in diameter; (ii) a soil textural class; (iii) (engineering) - a fine grained soil that has a high plasticity index in relation to the liquid limit.

coarse texture - The texture exhibited by sands, loamy sands, and sandy loams but not including very fine sandy loam. A soil containing large quantities of these textural classes.

compaction - Increasing the density of a material by reducing the voids between the particles by mechanical effort.

composite sample - A sample comprised of two or more subsamples.

consistency - (i) The resistance of a material to deformation or rupture, (ii) the degree of cohesion or adhesion of the soil mass.

control section - Control section is the vertical section of soil upon which classification is based. For mineral soils in general the control section extends either from the mineral surface to 25 cm below the upper boundary of the C or IIC or to a depth of 2 m, whichever is less. Exceptions are: (a) if the upper boundary of the C or IN is less than 75 cm from the mineral surface, the control section extends to a depth of 1 m, (b) if bedrock occurs at a depth of less than 1 m, the control section is from the surface to the lithic contact. A lithic contact is the upper surface of a lithic layer which is a consolidated bedrock layer. For organic soils the control section extends from the surface either to a depth of 160 cm or to a lithic contact.

crust - A surface layer on cultivated soils, ranging in thickness from a few millimetres to perhaps as much as 2 cm, that is much more compact and/or hard and brittle when dry, than the material immediately beneath it.

derelict land – Land voluntarily abandoned or willfully cast away by its owner with the intention of not retaking it.

disturbed land - Land on which excavation has occurred or upon which overburden has been deposited, or both.

ecology - A branch of science concerned with the interrelationship of organisms and their environment.

ecosystem - An ecological community considered together with the nonliving factors of its environment as a unit.

environment - The whole complex of climatic, edaphic, and biotic factors that act upon an organism or an ecological community, and ultimately determine its form and survival.

erodibility - A measure of the susceptibility of a soil to particle detachment and transport by rainfall and runoff.

erosion - The general process or the group of processes whereby the earthy and rocky materials of the earth's crust are loosened, dissolved, or worn away, and simultaneously removed from one place to another, by natural agencies that include weathering, solution, corrosion and transportation.

essential element (plant nutrition) - A chemical element required for the normal growth of plants.

fertility, soil - The status of a soil with respect to the amount and availability to plants of elements necessary for plant growth.

fertilizer - Any organic or inorganic material of natural or synthetic origin which is added to a soil to supply certain elements essential to the growth of plants.

fertilizer requirements - The quantity of certain plant nutrient elements needed, in addition to the amount supplied by the soil, to increase plant growth to a designated optimum.

fill - Depth to which material is to be placed (filled) to bring the surface to a predetermined grade. Also, the material itself.

fine texture - Consisting of or containing large quantities of the fine fractions, particularly silt and clay.

ground cover - Any living or dead vegetative material producing a protective mat on or just above the soil surface.

groundwater - That part of the subsurface water that is the zone of saturation, including underground streams. Also called phreatic water; phreatic water.

gully erosion - Erosion of soil or soft rock material by running water that forms distinct, narrow channels that are larger and deeper than rills and that usually carry water only during and immediately after heavy rains or following the melting of ice or snow.

hydraulic conductivity - The rate of flow of water through a given cross section of area under hydraulic gradient at the prevailing temperature.

hydrogeology - The science that deals with subsurface waters and related geologic aspects of surface waters.

impermeability - The condition of a rock, sediment, or soil that renders it incapable of transmitting fluids under pressure.

impervious - Prohibits fluid flow.

infiltration - Water entering the groundwater system through the land surface.

land classification - Classification of specific bodies of land according to their characteristics or to their capabilities for use. A use capability classification may be defined as one based on both physical and economic considerations according to their capabilities for man's use, with sufficient detail of categorical definition and cartographic (mapping) expression to indicate those differences significant to man.

land use planning - The development of plans for the uses of land that, over long periods, will best serve the general welfare, together with the formulation of ways and means for achieving such uses.

leachate - A solution obtained by leaching, for example, water that has percolated through soil containing soluble substances and that contains amounts of these substances in solution.

leaching - The removal of materials in solution by the passage of water through the soil.

micronutrients – A nutrient necessary in small, trace or minute amounts for the growth of plants.

mined-land – Land with new surface characteristics due to the removal of mineable commodities by surface mining methods and subsequent surface reclamation.

mulch – A natural or artificial layer of plant residue or other materials placed on the soil surface to protect seeds, to prevent blowing, to retain soil moisture, to curtail erosion and to modify soil temperature.

mycorrhiza – A unique association generally considered mutually advantageous between the root tissue of higher plants and fungi.

native species – A species which is part of the area original fauna or flora.

natural revegetation – Natural re-establishment of plants; propagation of new plants over an area by natural processes.

natural seeding (volunteer) – Natural distribution of seed over an area.

neutral soil – A soil in which the surface layer, at least to normal cultivation depth, is neither acid or alkaline in reaction.

neutralization – The process of adding an acid or alkaline material to water or soil to adjust its pH to a neutral position.

nutrient – A chemical element or inorganic compound taken in by a green plant and used in organic syntheses

overburden – The earth, rock and other materials overlying a mineral deposit which must be removed prior to mining.

parent material - The unconsolidated and more or less chemically weathered mineral or organic matter from which the solum of a soil is developed by pedogenic processes.

particle size distribution - The amount of the various soil separates (sand, silt, clay) in a soil sample, usually expressed as weight percentages.

peat - Unconsolidated soil material consisting largely of undecomposed, or only slightly decomposed, organic matter.

percolation - Downward movement of water through soils.

permeability - The measure of the capacity for transmitting a fluid through a substance.

pH - The symbol or term refers to a scale commonly used to express the degrees of acidity or alkalinity. On this scale pH of one is the strongest acid, pH of 14 is the strongest alkali; pH of seven is the point of neutrality.

phytotoxic - Poisonous to plants.

porosity - The volume percentage of the total bulk not occupied by solid particles.

productivity, soil - The capability of a soil in its normal environment for producing a specified plant or sequence of plants under a specified system of management. The "specified" limitations are necessary since no soil can produce all crops with equal success, nor can a single system of management produce the same effect on all soils. Productivity emphasizes the capacity of soil to produce crops and should be expressed in terms of yields.

productive soil - A soil in which the chemical, physical and biological conditions are favourable for the production of crops suited to a particular area.

reclamation - The concept of reclamation of land has been defined as including all desirable and practicable methods for:

- (a) designing and conducting a surface disturbance in a manner that minimizes the effect of the disturbance and enhances the reclamation potential of the disturbed lands;
- (b) handling surficial material in a manner that ensures a root zone that is conducive to the support of plant growth where required for future use;
- (c) contouring the surface to minimize hazardous conditions to ensure stability and to protect the surface against wind or water erosion;

reconstructed profile - The result of selective placement of suitable overburden material on reshaped spoils.

reforestation - The natural or artificial restocking of an area with forest trees.

regrading - The movement of earth to change the shape of the land surface. A finer form of backfilling.

rehabilitation - Implies that the land will be returned to a form and productivity in conformity with a prior land use plan, including a stable ecological state that does not contribute substantially to environmental deterioration and is consistent with surrounding aesthetic values.

revegetation - The establishment of vegetation which replaces original ground cover following land disturbance.

saline soil – A nonalkali soil containing soluble salts in such quantities that they interfere with the growth of most crop plants. The conductivity of the saturation extract is greater than 4 dS/m, the exchangeable sodium percentage is less than 15, and the pH is usually less than 8.5.

sand – A soil particle between 0.05 and 2.0 mm in diameter.

seedbed – The soil prepared by natural or artificial means to promote the germination of seed and the growth of seedlings.

silt – Small mineral soil grains, the particles of which range in diameter from 0.05 to 0.002 mm (or 0.02 to 0.002mm in the international system).

sodic soil – A soil containing sufficient sodium to interfere with the growth of most crop plants. A soil having an exchangeable sodium percentage of 15 or more.

soil – (i) The collection of natural bodies of the earth's surface, in place, modified or even made by man of earthy materials containing living matter and supporting or capable of supporting plants out-of doors, (ii) the unconsolidated mineral matter on the surface of the earth that has been subjected to and influenced by genetic and environmental factors of: parent material, climate (including moisture and temperature effects), macro and microorganisms, and topography, all acting over a period of time and producing a product – soil – that differs from the material from which is derived in many physical, chemical biological, and morphological properties and characteristics.

soil management - The sum total of all tillage operations, cropping practices, fertilizer, lime and other treatments conducted on or applied to a soil for the production of plants.

soil organic matter - The organic fraction of the soil; includes plant and animal residues at various stages of decomposition, cells and tissues of soil organisms, and substances synthesized by the soil population.

soil profile - A vertical section of a soil which displays all its horizons and its parent material.

soil survey - A general term for the systematic examination of soils in the field and in the laboratories, their description and classification, the mapping of kinds of soil, and the interpretation of soils for many uses, including their suitabilities or limitations for growing various crops, grasses and trees, or for various engineering uses and predicting their behaviour under different management systems; for growing plants and for engineering uses.

spoil - The overburden below the topsoil and subsoil that has been removed in surface mining to gain access to the mineral substance in surface mining.

spoil bank (spoil pile) - Area created by the deposited spoil or overburden material prior to backfilling. Also called cast overburden.

stoniness classes - The classes of stoniness are defined on the basis of the percentage of the land surface occupied by fragments coarser than 15 cm in diameter.

Stone 0 (nonstony) - there are very few stones (0.01% of surface, stones more than 30 m apart).

Stones 1 (slightly stony) - some stones are present that hinder cultivation slightly or not at all (0.01 to 0.1% of surface, stones 10 to 30 m apart).

Stones 2 (moderately stony) - enough stones are present to cause interference with cultivation (0.1 to 3% of surface, stones 2 to 10 m apart).

Stones 3 (very stony) - there are sufficient stones to handicap cultivation seriously; some clearing is required (3 to 15% of surface, stones 1 to 2 m apart).

Stones 4 (exceedingly stony) - the stones prevent cultivation until considerable clearing is done (15 to 50% of surface, stones 0.1 to 0.5 m apart).

Stones 5 (excessively stony) - The land surface is too stony to permit cultivation; it is boulder or stone pavement (more than 50% of the surface, stones less than 0.1 m apart).

strip mine - Refers to a procedure of mining which entails the complete removal of all material from over the product to be mined in a series of rows or strips.

stripping - The removal of earth or nonore rock materials as required to gain access to the ore or mineral materials wanted. The process of removing overburden or waste material in a surface mining operation.

surface soil - The upper portion of arable soils commonly stirred by tillage implements or an equivalent depth (12 to 20 cm) in nonarable soils. That portion of the soil profile occurring at the surface and generally having the highest organic matter content; the A horizon.

synecology - The study of relationships between the environment and the different organisms that make up a biological complex in a single locale. Considered are the various species, the complex of organisms that make up a biological complex in a single locale. Considered are the various species, the complex of organisms and the association of the assemblage of species with the biologically significant abiotic components of the environment.

tilth – The physical condition of a soil in respect to its fitness for the growth of a specified plant.

topography – The shape of the ground surface, such as hills, mountains, or plains. Steep topography indicates steep slopes or hilly land; flat topography indicates flat land with minor undulations and gentle slopes.

vegetative cover – The entire vegetative canopy on an area.

water table – The surface between the zone of saturation and the zone of aeration; that surface of a body of unconfined ground water at which the pressure is equal to that of the atmosphere.

7.1 REFERENCES FOR GLOSSARY

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