GLOSSARY

ACID-PRODUCING MATERIAL: Geologic material (rock strata) containing sufficient pyrite of a reactive form that when exposed to air and water will cause the formation of sulfuric acid.

AMENDMENT: Material such as lime, fertilizer, and manure added to minesoil to make it productive or more productive of vegetation.

ARTIFICIAL PASTURE: Grazing lands under relatively intensive management, usually supporting introduced forage species and receiving periodic cultural treatments, such as tillage, fertilization, mowing, and irrigation.

ARTIFICIAL REVEGETATION: The establishment of vegetation by mechanical or unnatural methods.

AVAILABLE NUTRIENT: The part of the supply of a plant nutrient in the soil that can be taken up by plants.

BROADCAST SEEDING: Spreading or scattering seed on the soil surface.

BROWSE: That part of current leaf and twig growth of shrubs, woody vines, and trees available for animal consumption.

BRUNCHGRASS: Grasses so called because their growth characteristic is a distinct tuft, clump, or bunch.

CANOPY: The cover formed by the aerial portion of trees and shrubs. Measured as the vertical projection downward of the leaves and branches. Similar to overstory.

CATION: An ion carrying a positive charge of electricity. The most common cations in eastern minesoils are calcium, magnesium, potassium, hydrogen, aluminum, iron, and manganese.

CATION EXCHANGE CAPACITY: A measure of the total amount of exchangeable cations that can be held by the soil. It is expressed in terms of milliequivalents per 100 grams of soil (meq/100 g).

CLAY: Mineral soil particles less than .002 mm in diameter. As a textural class, soil that contains 40 percent or more clay-size particles, less than 45 percent sand, and less than 40 percent silt.

COMPACTION: The closing of pore spaces among the particles of soil and rock; most often caused by repeated running of heavy equipment over an area or by excessive trampling by livestock. At lower depths, caused by weight of soil above.

CONTOUR: An imaginary or measured line that is kept at the same elevation (level) for its entire length, usually in reference to tillage or terracing at right angles to the direction of slope.

DENSITY: The number of plants or specific plant parts per unit area of ground surface.

DOMINANT SPECIES: The major constituent of a plant or animal community.

DRILL SEEDING: Planting seed in rows with an implement called a drill.

ENVIRONMENT: Sum of all external forces, conditions, and substances that affect organisms in any way.

EROSION: The wearing away of the land surface by detachment and transport of soil and rock materials caused by the action of moving water, ice, wind, and other geological agents.

GULLY EROSION: Caused by water accumulating or concentrating in channels; soil is removed to considerable depths.

RILL EROSION: The formation of numerous small channels only several inches deep.

SHEET EROSION: The removal of a fairly uniform layer of soil from the surface by runoff.

SPLASH EROSION: The spattering of soil particles caused by the impact of raindrops or water dripping from tall vegetation. On slopes, the soil particles are moved down slope by the repeated spattering of raindrops; also may be removed by surface runoff. A dense cover of herbaceous vegetation prevents splash and sheet erosion and retards or slows rill and gully erosion but may not prevent it.

EXCHANGEABLE: Describes the ions in the absorbing complex of soil that can be exchanged with other ions. For example, when acid soils are limed, calcium ions exchange for hydrogen ions in the complex.

EXCHANGEABLE ACIDITY: The amount of ions, mostly hydrogen, aluminum, and iron that, brought into the soil solution by ion exchange, can react with basic materials such as lime; measured as acidity.

EXOTIC: An organism that is not native to the area where it is found.

FERTILIZER: Any natural or manufactured material added to soil to provide one or more plant nutrients.

FIELD CAPACITY: The amount of water held in the soil after the excess or gravitational water has drained away.

FORAGE: All browse and herbaceous plant material that can be used as food by domestic livestock or wildlife. Forage may be either grazed or harvested for feeding.

FORAGE PRODUCTION OR YIELD: The weight of forage produced in a designated period on a given area. May be expressed as green, air dry, or oven-dry weight.

GERMINATION: Beginning of growth or sprouting as from a seed.

GRAZING CAPACITY: The maximum stocking rate possible without inducing damage to vegetation and related resources.

GROUND COVER (OF VEGETATION): The total area of live aerial and basal parts of plants, or the combined parts of plants and plant litter that, projected vertically downward, provides cover to the ground. Usually expressed as percent of ground surface that is covered by vegetation when viewed or measured directly from above. Also called vegetative cover.

HERB: Any flowering plant except those developing persistent woody stems above ground.

HERBAGE: Herbs taken collectively, often used in the same sense as forage, except that it may include plant material not acceptable to animals.

HORIZON, SOIL: A layer of soil, approximately parallel to the soil surface, with distinct characteristics produced by soil-forming processes.

A HORIZON: The surface horizon of a mineral soil having maximum biological activity, or eluviation (removal of materials dissolved or suspended in water), or both. See TOPSOIL.

B HORIZON: A soil horizon beneath the A horizon, or surface soil, in which clay, iron, and aluminum, with accessory organic matter, have accumulated by receiving suspended material from the horizon above it. In soils with distinct profiles, the B horizon is roughly equivalent to the term "subsoil."

C HORIZON: The unconsolidated rock material in the lower part of the soil profile like that material from which the upper horizons, or part of them, have developed. See PARENT MATERIAL.

HUMUS: The decomposed organic fraction of soil.

HUMID CLIMATE: A climate with a high average relative humidity and enough precipitation to support predominantly forest vegetation. The precipitation effectiveness index ranges from 64 to 128.

INTERPLANTING: Anyone of several ways of planting one species or type of plant in association with another species or type of plant.

INTRODUCED SPECIES: A species not a part of the original plant or animal communities in a given area.

INVADERS: Plant species that move into an area, usually a disturbed area, by natural seeding from surrounding areas.

INVASION: The migration of organisms from one area to another in which they become established.

ION: As used in soils, refers to an electrically charged element or combination of elements resulting from the breaking up of an electrolyte in solution. Since most soil solutions are highly dilute, many of the salts exist as ions. For example, potassium chloride in most soils exists as potassium ions (cation) and chloride ions (anions). Cations are positively charged, anions negatively charged.

LANDSCAPE: The combination of characteristics that give an area a distinguishing appearance in contrast to other areas.

LEACHING: The removal of soluble materials by the passing of water through soil.

LIME: In common usage, the term applied to all limestone-derived materials used as amendments to reduce acidity in acid soils.

LITTER: Undecomposed plant residuum on the soil surface.

LOAM: In general terms, a soil of intermediate texture between the coarse-textured or sandy soils and the fine-textured or clayey soils.

LOESS: Geologic deposits of fine-grained, predominantly silt-size material, presumably transported by wind.

MAST: Nuts and acorns that are consumed by animals.

MICROORGANISMS: Forms of life that are microscopic or submicroscopic.

MINESOIL: The mixture of earth and rock materials left on the mined area to serve as the growth medium for plants after shaping and grading is completed and the area is ready for planting. Generally, does not include replaced topsoil. Similar to spoil.

MYCORRHIZAE: The morphological association, usually symbiotic, of fungi and roots of seed plants.

NATIVE SPECIES: A species that is part of the original flora or fauna of an area.

NATURAL REVEGETATION: The reestablishment of plants, or propagation of new plants over an area by natural processes.

NITROGEN FIXATION: The conversion of atmospheric (free) nitrogen to nitrogen compounds that are eventually usable by plants. Nitrogen-fixing organisms associated with plants such as legumes are called symbiotic, i.e., the plants and organisms each contribute to the benefit of the other.

NUTRIENT: Any element or compound taken into a plant or animal that is essential to its growth.

ORGANIC MATERIAL: Nonmineral matter composed of compounds consisting primarily of carbon, hydrogen, and oxygen, and derived from living organisms.

OVERBURDEN: The earth and rock materials that lie above the coal seam.

OVERSTORY: The taller vegetation growing above vegetation with a lower growth form, e.g., trees are an overstory to herbs and shrubs.

OXIDATION: A chemical change of an element or compound involving the addition of oxygen or its chemical equivalent. In the weathering of pyritic materials, sulfur is oxidized to form sulfuric acid.

PARENT MATERIAL: The unconsolidated mass of rock material from which the soil profile develops. Usually synonymous with C horizon.

PASTURE: Grass or other growing plants used as food by grazing animals.

PERMANENT VEGETATION: Communities of vegetation consisting mostly of plant species that are long lived and that regenerate themselves indefinitely under appropriate management.

PLANT COMMUNITY: An aggregation of plant species within a specific area.

PLANT SUCCESSION: The natural process of vegetational development whereby an area becomes occupied successively by different plant communities of higher ecological order.

PRAIRIE: A tract of land that was originally treeless and covered predominantly with grasses and forbs.

PRECIPITATION EFFECTIVENESS (P-E) INDEX: The sum of the 12 monthly quotients of precipitation divided by evaporation.

PROPER GRAZING: The degree and time of grazing of current year's growth that, if continued, will either maintain or improve the condition of pasture or range consistent with conservation of associated natural resources.

PYRITE: A mineral compound of iron and sulfur, most forms of which produce acidic conditions when exposed to water and oxygen.

RANGE: Land producing native forage for animal consumption and lands that are revegetated naturally or artificially to produce a plant cover that is managed as native vegetation.

REFORESTATION: The natural or artificial restocking of an area with trees.

REVEGETATION: The reestablishment of vegetation by either natural or mechanical means.

RHIZOBIA: The bacteria that live symbiotically with leguminous plants within nodules on their roots.

RHIZOME: A horizontal undergound stem, usually sending out roots and aboveground shoots at the nodes (joints).

ROOT ZONE: The part of the soil inhabitated by the roots of plants.

SAMPLE: A part of a population taken to estimate the quantity or quality of the whole.

SAND: Soil particles with diameters between 0.05 and 2.00 mm. The textural class name of any soil containing 85 percent or more of sand and not more than 10 percent clay.

SANDSTONE: A cemented or otherwise compacted sedimentary rock composed predominantly of sand-size grains.

SCARIFY: Abrasion of the hard seedcoat, mostly of legume seeds, to decrease time required for germination. Also, to scratch or loosen the soil surface as for seedbed preparation.

SEEDBED: Soil prepared by natural or artificial means to promote the germination of seed and the growth of seedlings.

SEEDLING: In forestry, a plant at least 1 year old that is dug from a nursery bed for transplanting. May also refer to young plants less than 1 year old that are grown indoors in containers. With herbaceous species, a small plant from time of initial emergence of root and shoot from the germinating seed until initial development of the secondary root system.

SHALE: Sedimentary rocks generally formed by consolidation of clay or clay-like material, and exhibiting distinct cleavage parallel to the bedding. Similar rocks without cleavage are claystones.

SILT: Soil particles ranging in diameter from 0.05 to 0.002 mm. Also, the textural class name of soil containing 80 percent or more silt and less than 12 percent clay. Loosely applied to sediments deposited from water.

SOD GRASSES: Grasses with stolons or rhizomes that form a sod or turf.

SOIL: The unconsolidated mineral and organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants.

SOIL TEXTURE: Refers to the relative proportions of groups of soil particles of various size in a mass of soil. Specifically, the relative proportions of sand, silt, and clay in the fine-earth portion of minesoils.

SPECIES COMPOSITION: The relative proportions of various plant species in the total cover or yield of vegetation on a given area.

SPOIL: The overburden materials removed from above the coal and placed near the excavation or back in it after the coal is removed. Similar to minesoil.

SPOIL BANK: The deposited pile of ungraded spoil or overburden.

STAND: An effective number of one or more plant species of the same life form.

STOLON: A stem growing horizontally on the surface of the soil and that forms roots and shoots at the nodes.

SUBSOIL: Generally, similar or synonymous to the B horizon of soils with distinct profiles. Cannot be accurately defined in soils with weak profile development.

SYMBIOTIC: Refers to the living together of two different organisms with a resulting mutual benefit.

TILLAGE: The operation of implements through the soil to prepare seedbeds and rooting beds.

TOPSOIL: The original or present dark-colored upper soil; or the original or present A horizon; also synonymous with surface soil or surface plow layer. Applied to soils in the field, the term has no precise meaning unless defined as to depth or productivity in relation to a specific kind of soil.

TOXIC SPOIL (MINESOIL): Spoils (minesoils) with levels of aluminum, manganese or other elements that adversely affect plant growth. Broadly, spoils with pH below 4.0.

UNDERSTORY: Vegetation growing beneath the canopy of taller vegetation, e.g., herbs and shrubs growing beneath a canopy of overstory of forest trees.

VEGETATION: Vascular plants in general including grasses, forbs, trees, and shrubs occurring naturally or planted intentionally.

VEGETATIONAL: Concerned with vegetation. Not synonymous with vegetative.

VEGETATIONAL COVER: See Ground Cover.

VEGETATIVE: In a strict sense, the nutritive and growth function of plants in contrast to sexual reproductive functions. Although often done so in common usage, this term should not be confused with vegetation or vegetational.

VEGETATIVE REPRODUCTION: Propagation of new plants by any asexual method.

VOLUNTEER PLANTS: Vegetation springing up spontaneously without having been planted artificially.

WATERSHED: Total land area above a point on a stream that contributes water to the stream flow at that point.

WEATHERING: The physical and chemical changes, disintegration, and decomposition of rocks and minerals resulting from the effects of weather, climate, and microorganisms.

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Vogel, Willis G. A guide for revegetating coal minesoils in the Eastern United States. Broomall, PA : Northeast. For. Exp. Stn.; 1981; USDA For. Serv. Gen. Tech. Rep. NE-68. 190 p.

Provides information, recommendations, and guidelines for revegetating land in the Eastern United States that has been disturbed by coal mining. Includes brief descriptions of major coal mining regions in the East, and a discussion of minesoil properties and procedures for sampling, testing, and amending minesoils. Plant species used in revegetating surface-mined lands are identified. Selection criteria for plant species and methods and requirements for seeding and planting are explained.

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